The
ILLINOIS
Medical Journal

Official Journal of The Illinois State Medical Society

NOVEMBER, 1956
VOL. 110. NO. 5

Changing the Face of the World

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THE interesting events connected with the development of the poliomyelitis vaccine, and particularly the difficulties encountered in its manufacture and therapeutic assessment are mainly responsible for the preparation of this paper. The paper itself represents a sort of look-back to a series of dramatic happenings centering around and leading up to the development of the first vaccine against an infectious disease, namely, smallpox. In those days smallpox was a vastly more terrifying disease than is poliomyelitis today. If, tonight, we could mount a magic carpet and in imagination sail away to the London of two centuries ago, where, transformed in time and space, we could listen to the reading of this paper, many of us would have pock-marked faces and all of us would be fortunate to have faces at all. For in 1756 smallpox was probably the greatest single killer and disfigurer of mankind. Its conquest represents a supreme medical achievement, an achievement unfortunately often forgotten, mainly because of complacency, but usually at a heavy cost to the forgetter. For example, in the United States Army in World War II, 115 cases of smallpox were reported, with 24 deaths; and in 1945 and 1946, among the American troops in Korea and Japan, 126 cases were reported with 25 deaths. Even in England, and as late as 1953, an epidemic occurring in a manufacturing area caused five deaths and threw consternation into those who were preparing for the coronation ceremonies for Elizabeth II. These happenings represent mostly a carelessness in vaccination enforcements. However, they may also indicate a failure of some vaccine viruses to protect against virulent smallpox. In New York City in 1947 the appearance of 2 cases of smallpox, with one death, led to the immediate vaccination of some 5,000,000 persons. And yet, as a result of vaccination, there are many physicians throughout the world who have never seen a patient with smallpox, and today one can walk the city streets and scrutinize the countenances of scores of persons without seeing a single pock-marked face.

If one is inclined to believe that the Salk vaccine has encountered unusual difficulties, one should compare its vicissitudes with those of the Jenner vaccine. Although the events accompanying the field trials of the former were unfortunate and unanticipated, at least no anti-vaccination societies have as yet been organized to combat it, no one from the pulpit has been stigmatized as diabolical or anti-Christ, no mobs have formed to prevent its use, and Dr. Jonas Salk has not been accused of "monkeyizing" or

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Presented before the Chicago Society of Medical History, April 11, 1956.

bestializing the human species. In contrast, Edward Jenner's vaccine, so named from the word vacca, meaning cow, was alleged to promote the growth of cow's horns, faces and tails, to make people cough and bellow like bulls, and in other ways to bovinize countless beef-eating and milk-drinking Englishmen.

Several interesting comparisons may be made with reference to the development of the two vaccines. For example, the March of Dimes would not have gained its favorable momentum had it not been for the earnest support of President Roosevelt. Similarly, vaccination against smallpox in America would doubtless have been considerably delayed had it not been for the active interest of President Jefferson in the experiments of Dr. Benjamin Waterhouse. Success of the poliomyelitis vaccine was based on groundwork laid by many earlier investigators, work which eventuated in a method of tissue culture suitable for the growth of the virus in monkey kidneys. The development of the cowpox vaccine was also based on earlier evidence that inoculation with smallpox matter could prevent smallpox and from observations by milkmaids that, because they had had cowpox, they could not contract smallpox. Many years elapsed before vaccination of children with poliomyelitis virus, even though dead, became thinkable; and even now some experts believe that eventually we will have to use a living virus. In launching the polio vaccine program accelerated as it was by the desire of its promoters to save life and prevent deformity, haste made waste. This was not a complication with the cowpox vaccine. Almost 28 years passed from the time that Edward Jenner got the idea until he did anything in particular about it. In fact, he was only 19 years old when he was told by a patient she could not take smallpox because she had had cowpox. Jenner was 48 when he published his classic Inquiry.

For many years Jenner talked so much about the cowpox that he became a veritable nuisance to his medical friends; they thought he had a bee in his bonnet; and while he was talking millions continued to sicken and die, to become disfigured or blind, from the effects of smallpox. It would be interesting to know why he took so long to put his theory to the test, knowing as he did the horrors of the disease. But even after John Hunter had told him, "Dont think, try," the years rolled on. It may be that the attributes of indolence and procrastination which Jenner so freely attributed to himself may have been responsible; more probably the times were not conducive to experimentation as we practice it today. At any rate there is nothing new about time-lags in science. For example, Dr. C. P. Rhoades of New York City has recently commented upon the subject as follows: Although the relationship of the pancreas to diabetes was clearly shown in 1889, and even before World War I pancreatic extracts were known to lower blood sugar levels, insulin was not found until 1922. About 18 years elapsed between the discoveries of Pasteur and their application by Lister. Pasteur demonstrated the principle of antibiosis in 1877 but Fleming did not discover penicillin until 1929. The antibacterial action of sulfanilamide was demonstrated by two scientists in New York City in 1919, but the substance was put on the shelf and presumably not dusted off again until Domaghk received the Nobel prize for his work with it in 1935. The nature of scurvy was known almost a century before the British Navy did anything about it. In the meantime "the very existence of Great Britain was jeopardized during all of which time the Navy was making countless appeals for more men to man the fleets." "Only the ineptitude and corruption of the Napoleonic regime prevented it from breaking the seapower of England, with her sea-going manpower decimated by uncontrolled and wholly unnecessary deficiency disease."

Although the origin of smallpox, or variola, is obscure, it was presumably known in China at least a thousand years before the birth of Christ, and it is said that temples were erected in its honor in which the goddess of the disease was glorified. In those times, also, inoculation or "sowing the smallpox" was practiced. And even today in China, I am told, the red pock-marks representing recovery and immunity to the disease are referred to as "the flowers of heaven." It also seems to have existed in India long before the Christian era. There is doubt, however, that Greek physicians were familiar with it. It appeared in England some time between the sixth and tenth centuries and is thought to have been brought to America by Columbus where it quickly spread among the Indian tribes. It appeared among the New England colonists in about 1631 and from then on

epidemics recurred in the succeeding century with devastating effects. Thus in Boston, in 1752, an epidemic occurred in which, out of a population of over 15,000, only 174 people remained who had never had the disease. It apparently reached its zenith in Europe in the 18th century at which time every tenth death was attributed to it, and estimates indicate that during this century more than 60,000,000 persons perished from the disease. It spared neither king nor peasant; among its victims may be cited the following: William II of Orange, Emperor Joseph I of Germany, Louis XV of France, two children of Charles I of England, a son of James II, his daughter Queen Mary and his grandson, the Duke of Gloucester, two German Emperors and six Austrian archdukes and duchesses. Empress Maria Theresa of Austria nearly died from it in her later years. In general, however, its victims were mostly children.

No account of smallpox would be complete without citation of the well-known passage from Macauley relative to the death in 1694 of Queen Mary, wife of William III. "That disease, over which science has since achieved a succession of glorious and beneficent victories, was then the most terrible of all the ministers of death. The havoc of the plague had been far more rapid; but the plague had visited our shores only once or twice within living memory; and the smallpox was always present, filling the churchyards with corpses, tormenting with constant fears all whom it had not yet stricken, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to her lover."

In Henry Esmond, written by Thackeray about a century ago, is the following: "Since Lady Mary Wortley Montagu brought home the custom of inoculation from Turkey (a perilous practice many deem it, and only a useless rushing into the jaws of danger) I think the severity of smallpox, that dreadful scourge of the world, has somewhat been abated in our part of it; and remember in my time hundreds of the young and beautiful who have been carried to the grave, or have only risen from their pillows frightfully scarred and disfigured by this malady. Many a sweet face hath left its roses on the bed on which this dreadful and withering blight had laid them. In my early days, this pestilence would enter a village and destroy half its inhabitants; at its approach, it may well be imagined not only the beautiful but the strongest were alarmed, and those fled who could." In chapters VIII and IX Thackeray gives a detailed description of the terror connected with the appearance of smallpox near Castlewood House and its consequences in terms of death and demoralization.

Prior to the era of preventive medicine, treatment for the disease was largely unavailing. During the humoral period, that is, until almost 1850, the most important therapeutic problem, apparently, was to drive out the peccant humours. This was done mostly by sweatings and by applications of heat. Illustrative of this was the treatment by John of Gaddesden, physician to Edward II, at about 1320. His prescription was to wrap the patient in a red cloth and to enclose the bed entirely in hangings of a red color, presumably to bring the peccant humours to the surface. Improvement in therapy came when Sydenham, in about 1667, began his reform by demanding plenty of fresh air and cooling treatments for febrile patients. But smallpox, as we now know, was usually complicated by bacterial infection of the cutaneous lesions, and death was commonly a consequence of overpowering sepsis. It would, of course, be much less menacing today because of the availability of chemotherapeutic and antibiotic agents.

In Europe and America the first steps along the path leading up to vaccination came early in the 18th century. The procedure of variolation, namely, the introduction of smallpox matter into human subjects, came almost simultaneously in Europe and America, in England largely because of the efforts of Lady Mary Wortley Montagu, wife of the British Ambassador to Turkey. In her classic letter to a friend in London, written on April 1, 1717, we find the following: "apropos of distempers, I am going to tell you a thing that will make you wish yourself here. The smallpox so fatal, and so general amongst us, is here entirely harmless, by the invention of *ingrafting*, which is the term they give it. There is a set of old women, who make it their business to perform the operation, every autumn in the month of September, when the great heat is abated.

"People send to one another to know if any of their family has a mind to have the small-pox! They make parties for this purpose, and when they are met (commonly fifteen or sixteen together), the old woman comes with a nut-shell full of the matter of the best sort of small-pox, and asks you what vein you please to have opened.". . . . . "The children or young patients play together all the rest of the day, and are in perfect health to the eighth. Then the fever begins to seize them, and they keep their beds two days, very seldom three. They have very rarely above twenty or thirty in their faces, which never mark, and in eight days they are as well as before their illness. Where they are wounded, there remain running sores during the distemper, which I don't doubt is a great relief to it.

"Every year thousands undergo this operation; and the French Ambassador says pleasantly, that they take the small-pox here by the way of diversion, as they take the waters in other countries. There is no example of anyone that had died of it; and you may believe that I am well satisfied of the safety of this experiment since I intend to try it on my dear little son.

"I am patriot enough to take pains to bring this useful invention into fashion in England, and I should not fail to write to some of our doctors very particularly about it, if I knew any of them that had virtue enough to destroy such a considerable branch of their revenue, for the good of mankind. But that distemper is too beneficial to them, not to expose to all their resentment, the hardy wight that should undertake to put an end to it. Perhaps, if I live to return, I may, however, have courage to war with them. Upon this occasion admire the heroism of your friend."

Her son was inoculated that year and all went well. When Lady Montagu returned to London the following year she tried, but with not much success, to get the procedure accepted, particularly in Court circles. By 1721, however, smallpox was raging in England and at this time she had her four year old daughter inoculated. After much effort she finally persuaded King George I to allow the inoculation of his two granddaughters. Being a cautious king, he asked to have the procedure tried first on some inmates of Newgate prison. The prisoners were inoculated, all had takes, and one was sent to an epidemic area where he failed to contract the smallpox. Thus at long last, as a later king of England was to phrase it, the first George consented to have his granddaughters inoculated, and himself as well.

In the succeeding seven years, i.e., up to 1728, approximately 897 persons were inoculated, with a total mortality of 17.

The importance of variolation was recognized in America independently of the efforts of Lady Montagu, again largely because of the zeal of a layman, the Reverend Cotton Mather. There is reason to believe, moreover, that he was a reader of the Philosophical Transactions of the Royal Society and that he was for that reason familiar with the writings of two Greek physicians, Timoni and Pylarini, who had published in the Transactions their experiences with variolation in Constantinople. These papers were recorded in 1714 and 1716. Even earlier Mather had learned from a negro slave that it was a common practice in Africa to introduce smallpox matter into the skin and thus protect against the disease. Although Mather was ridiculed for believing such stories, he was probably the first to call the attention of Europeans to the practice of inoculation in Africa (Leikind).

When smallpox appeared in Boston in April of 1721, Mather, with his mind prepared for this contingency, took up the question of inoculation with the ten physicians in that city. None, however, seemed to be interested in his proposal, none, that is, except Dr. Zabdiel Boylston. Dr. Boylston, a respected physician, agreed to cooperate and he began by inoculating his six-year old son and two negro slaves. All went well so he proceeded to inoculate 35 persons, with no deaths. In the meantime, opposition began to grow and it mounted to the point where Dr. Boylston almost lost his life from the fury of a mob and his home from an attempt to set it on fire. A bomb was also thrown into the house of Cotton Mather while Mrs. Mather was at home, but the cap fell off and the bomb failed to explode. The press was also solidly against both Mather and Boylston and it is interesting that the sixteen-year old Benjamin Franklin and his brother made vicious attacks upon Dr. Boylston in their newspaper. The Massachusetts House of Representatives also passed a bill against inoculation; this, however, failed to become a law. It is of further interest that many years later, in

1736, Franklin bitterly regretted his earlier attitude, after his four-year old son had died from smallpox. Of this he said, "A fine boy of four years old, by the smallpox taken, in the common way. I long regretted bitterly and still regret I had not given it to him by inoculation. This I mention for the sake of parents who omit that operation, on the supposition that they shall never forgive themselves, if a child died under it, my example showing that the regret may be the same either way, and therefore that the safer should be chosen." Despite all opposition, Boylston continued to inoculate during 1721 while the epidemic raged, but by 1722 the disease was on the wane and he discontinued inoculations. In a quotation from a History of the Province of Massachusetts Bay, it is said that in 1721 and 1722, some 286 persons were inoculated; of these only six died, and several of those inoculated were supposed to have been infected with smallpox at the time of the inoculation. In contrast, of some 5,889 persons who contracted smallpox, but without inoculation, 844 died; and many who recovered were, of course, severely pockmarked.

Years later, in 1759, Dr. Boylston was elected to the Royal Society, one of the first Americans so honored.

During these years inoculation was practiced both in America and in England, particularly among the upper classes. Smallpox parties were formed, and people went to the hospital to have the disease together. Although there can be no doubt but that inoculation greatly reduced the mortality from smallpox and that it protected against future attacks, the practice was not without risk, either of death or disfigurement; and because it was smallpox, it tended to maintain and even disseminate the infection. As late as 1776, however, the soldiers in the Revolutionary armies suffered so much from the disease that General Washington ordered the whole army to be inoculated. This was done, hospitals being set up in several cities. As Leikind has said, this was "probably the greatest mass experiment of its type ever attempted up to that time."

By the latter quarter of the 18th century, however, it had become apparent in England that the disease was gaining ground and that variolation was not the answer to the problem of control. The next chapter was that of vaccination; in this one name stands supreme, that of a gentle country doctor by the name of Edward Jenner.

What kind of a man was this who did so much to change the face of the world? On his monument are inscribed the following lines:

Within this tomb hath found a resting place
The great physician of the human race
Immortal Jenner, whose gigantic mind
Brought life and health to more than half mankind.
Let rescued infancy his worth proclaim
And lisp our blessings on his honored name,
And radiant beauty drop her saddest tear
For beauty's truest, trustiest friend lies here.

Allowing both for poetic license and presumably for bad poetry as well, why did this man among all others discover the clue to the conquest of this overwhelming pestilence? Evidently in many ways he was a very ordinary person, kindly and lovable, possessed of great loyalty to his brother and his friends, fond of good food and good wines, of music and poetry, of nature and of his fellowmen. He was apparently unsystematic, was not adept in the use of his hands and in fact was scolded by John Hunter for his clumsiness in breaking a thermometer while taking temperatures of hibernating hedgehogs. He was also inclined to indolence and procrastination and said, "of all the ill habits a man may fall into, the most difficult to get rid of" and "this very sin has got me into more scrapes than all the rest put together."

Despite these attributes he practiced medicine conscientiously, was at one time justice of the peace and also mayor of Berkeley. Above all, however, for years he had a fixed idea, and it was that which made him great.

During the many years in which Jenner thought about the relationship of cowpox to smallpox he apparently had only occasional opportunities to put his ideas to the test. But in 1796 an outbreak of cowpox occurred on a farm nearby. An infected milkmaid by the name of Sarah Nelmes had pustules on the hand. Jenner took matter from one of these and inoculated it into a boy by the name of James Phipps. This occurred on May 14th, 1796. After the boy had gone through the customary course of cowpox the crucial test was made. Six weeks later, on July 1, Jenner inoculated the boy, but this time

with smallpox matter. The inoculation failed to take; and as Leikind has said, "thus was vaccination born." This marked the "first step in the scientific prophylaxis of disease" (Castiglioni).

Because Jenner was a member of the Royal Society, for reasons to be mentioned shortly, he decided to communicate his findings to that body. His manuscript was summarily rejected with the remark that if he valued his reputation he should be more careful of it, or words to that effect. It might be added at this point that his membership in the Royal Society was based on his earlier observations on the habits of the cuckoo. But Jenner was not dismayed, and after two more years, he published his first report in the now classic monograph, "An Inquiry Into the Causes and Effects of the Variolae Vaccinae, A Disease Discovered in Some of the Western Countries of England, Particularly Gloucestershire, and Known by the Name of the Cow Pox." This was in 1798. In the words of Victor Robinson, "It is a small pamphlet, with three engravings of arms, and the picture of the hand of Sarah Nelmes, showing the position and development of the pustules. It is a rather delicate hand, with tapering feminine fingers. Were it not for the pustulous sores on it, a poet might write a sonnet to this hand—the hand that helped to halt the disaster that in the eighteenth century alone wiped out sixty million human beings."

It is of interest that in this same year appeared another publication entitled "Essay on Population" written by an obscure young English curate by the name of Thomas Malthus. And so in 1798 was initiated the first step in preventive medicine which was destined, through lowered death rates and increasing population densities, to lead, a century and more later, to a renewed interest in the doctrines of Malthus and to stimulate the organization of societies for birth control, planned parenthood and the like.

Of Jenner's Inquiry it was later said: "No book so small has been talked of so much; no book has been read from the original so little; no book of such dimensions has made the name of any author so famous." (Sir Benjamin Ward Richardson). It was admittedly incomplete, both in evidence and in description, and the number of experiments was also small. Nevertheless, it quickly went into several editions and was translated into many languages. Jenner became almost overnight a famous figure. Within a year vaccine lymph was in use in Vienna, in Switzerland, Germany, Poland, Italy, Constantinople, in India and in fact throughout the world. His correspondence became prodigious, his practice was neglected, and, as he said, he had become "the vaccine clerk of the world." Because of his financial sacrifices he was persuaded, in March of 1802, to petition Parliament for pecuniary recompense. After considerable debate he was given a grant of 10,000 pounds. The vote to do this was 59 to 56, but it should be added, that the fifty-six minority votes were to give him 20,000 pounds, instead of the 10,000. Again, in 1807, Parliament voted him another grant of 20,000 pounds.

Other honors came to him, and from many places, diplomas, medals, honorary degrees, statues, institutes, etc. Indeed it has been said, "that he attained an influence throughout the world probably never before or since acquired by a private individual." For example, Napoleon quickly recognized the value of his discovery and utilized it in the French army; and in 1804 he presented Jenner with a gold medal. Later, when two young Englishmen were imprisoned in France and efforts to release them had proved unavailing, the parents of the two men asked Jenner to intercede with Napoleon, which he did.

"Sire: Providence has permitted me to make a discovery whose benefits are recognized by all nations. I dare to use this as an excuse to demand humbly a favor of your majesty, who early appreciated the importance of vaccination and encouraged its application; your majesty being universally recognized as a patron of science. My humble request is that you will permit two of my friends, Dr. Wickham and Mr. Williams to return to England. If your majesty will deign to grant my prayer, you will fill my soul with continued sentiments of gratitude. I am, etc." When Napoleon received this missive in Italy he immediately ordered the release of the men with the remark, "Ah, that man, we can deny him nothing."

Before ending these brief remarks about Jenner's contributions to smallpox, something should be said about two of his other scientific contributions—one responsible for his election to the

Royal Society, and one transmitted to posterity, and not properly evaluated for many decades after he had died.

His election to the Royal Society in 1788 came as a result of his studies of the habits of the cuckoo. He was then about 39 years old. Hunter had encouraged him to study the peculiar habit of this bird, namely, that of laying its eggs in other bird's nests rather than building a nest of its own. Jenner dissected many female cuckoos and found that each was capable of laying more than twenty eggs. Later he observed how the young cuckoo pushed its mates out of the nest while the mother bird, no matter of what species, continued to feed the little brute. There must be some philosophical principle to be drawn from this behavioral pattern, but at any rate, it seems odd that we should still use the expression "crazy as a cuckoo."

His other contribution, less well known, was his observation in 1778 of the association between the symptoms of angina pectoris and hardening of the coronary arteries. This discovery worried Jenner greatly because at this time his beloved teacher and friend, the great John Hunter, was exhibiting symptoms of angina. Jenner did not want to tell Hunter about his findings, which came to him in the following way: While performing an autopsy on a patient who had had symptoms of angina pectoris, and while making a transverse section near the base of the heart, Jenner noticed that his knife had struck something hard and gritty. He looked up to the ceiling, which was old and crumbly, thinking that some plaster had fallen, only to discover that the real cause of the grittiness was in the coronary arteries, which had become bony canals. He did not tell Hunter about this but when Hunter died a few years later, his coronary arteries were found to be markedly calcified.

I have already alluded to the interest of President Jefferson in the experiments of Dr. Waterhouse. The interesting chapter of the establishment of vaccination in this country was revealed more clearly some twenty years ago by Dr. Robert Halsey of New York City in a pamphlet entitled, "How the President, Thomas Jefferson, and Doctor Benjamin Waterhouse Established Vaccination as a Public Health Procedure." In searching for and finding the letters written by Dr. Waterhouse in the Library of Congress, Dr. Halsey was able to disclose why Waterhouse needed help and how he got it from the highest quarters.

Waterhouse became convinced of the importance of Jenner's discovery in 1799 when he first received a copy of the famous Inquiry. So impressed was he with it, he immediately reported the method in the Columbian Sentinel under the title, "Something Curious in the Medical Line." At that time Dr. Waterhouse was Professor of Theory and Practice of Physic in the Harvard Medical School. Already he was a controversial figure, partly because of personal idiosyncrasies, partly because he came from Rhode Island, and partly because he was not a graduate of Harvard. Moreover, he was a Quaker, and that was a serious blemish in the Boston of those days. In the article he discussed the differences between smallpox and cowpox and Jenner's discovery of vaccination. In his last paragraph he said, "This imperfect sketch is thrown into the newspaper at this time, with a view of exciting the attention of our dairy farmers to such a distemper among their cows. It may also be gratifying to some of the faculty of medicine, who, it is presumed, are not yet generally informed of an epizootic disease, capable of being communicated from the brute to the human kind, and which, when communicated, is a certain security against the smallpox." Cambridge, March 12, 1799.

Early in the following year he received cowpox "matter" from England and immediately vaccinated his four children, after which he had one son inoculated with smallpox matter in the smallpox hospital near Boston. No smallpox developed and the boy returned home on the twelfth day. As Waterhouse then said, "One fact, in such cases, is worth a thousand arguments." He next wished to spread the knowledge about cowpox in order to accelerate a program of vaccination, and he appealed accordingly to his friend, John Adams, then President of the United States. From the President he got many kind words but apparently very little else. Next he tried to get the Massachusetts Medical Society to take action, but he got little sympathy, perhaps again because of antipathy to him as a person. A member of this society, Dr. John Warren, in writing to his son then in London, said, "The Cow or Kine pox is making some noise here —

I wish you had thought of procuring and sending me some matter as Dr. Waterhouse is the only Physician who has received it from London and has begun to practice and the other physicians can not readily obtain it. John and I would like to know from you what its present character is and if you can easily obtain it and send it in a closely sealed vial. I may possibly have it in that way sooner than any other."

Others heaped calumny upon Waterhouse and endangered his life by threats. For example, an anonymous opponent published the following in a newspaper: "It happens however that sagacity is not quite monopolized, by faculty, and that the public can faintly discern without the assistance of an oculist; which being the case, I am ready to predict, that not only the sensibility of this Philanthropist but his popularity will require both philosophical, and medical aid, to become perfectly hale; and that the practice, with which he commences will silently pilot him back to his native dunghill." Pedro (Columbia Sentinel, September 6, 1800).

Finally, despairing of getting help from President Adams, Dr. Waterhouse turned to Jefferson who was at that time Vice-President and also candidate for the Presidency, running against President Adams. The first letter by Dr. Waterhouse was dated December 1, 1800, and was as follows:

Sir: Having long regarded Mr. Jefferson as one of our most distinguished patriots and philosophers, I conceived that a work which had for its end the good of the community would not be unacceptable to him. Under that impression I have here sent him a prospect of exterminating the smallpox, and am with the utmost consideration and respect, his very humble servt Benj Waterhouse."

To this letter Jefferson replied on December 25, as follows:

"Sir: I received last night, and have read with great satisfaction, your pamphlet on the subject of the kine-pox, and pray you to accept my thanks for the communication of it.

I had before attended to your publication on the subject in the newspapers, and took much interest in the result of the experiments you are making. Every friend of humanity must look with pleasure on this discovery, by which one evil more is withdrawn from the condition of man; and must contemplate the possibility, that future improvements and discoveries may still more and more lessen the catalogue of evils. In this line of proceeding you deserve well of your country; and I pray you accept my portion of the tribute due you, and assurance of high consideration and respect, with which I am, Sir, Your most obedient, humble servant, Thomas Jefferson."

These two lettters initiated a co-operative enterprise on the part of President Jefferson and Dr. Waterhouse covering the year 1801. Several of the later letters describe Jefferson's experiences in the use of vaccinal material sent to him by Dr. Waterhouse and sent by Jefferson, in turn, to physicians in Virginia, Maryland and elsewhere. Because the virus had to be sent on threads and toothpicks, much of it was inert on arrival and numerous attempts at vaccination were unsuccessful. Finally, however, success was achieved, and Jefferson himself vaccinated members of his family and neighbors totalling approximately 200 persons. Moreover, after the vaccinations he had many of them also inoculated with smallpox matter, thus proving that the vaccination was protective against smallpox. Dr. Waterhouse was filled with "pleasure inexpressible" at the success of Jefferson's experiments and in a letter he commented that by Jefferson's influence the "practice of vaccination had been forwarded at least two years."

Some fifteen years later Dr. Waterhouse in a letter to a friend explained why he had turned to Jefferson for help after he had become convinced that he would not get assistance from President Adams in the promotion of vaccination. This letter, written in 1815, told how, in the 1800 campaign for the Presidency, the members of the Harvard faculty were importuned to rally with the clergy and form the front rank of the army of federalism in Massachusetts "in opposition to infidelity, Jacobinism and Jeffersonism." As Waterhouse said, "My associates, and the clergy very generally swallowed and relished this doctrine, while I remained rather silent." Is it surprising that Waterhouse was unpopular with his colleagues?

Another interesting chapter in the development of the cowpox vaccine is that of the opposition to it. Here, as Leikind has pointed out, the printing press was an important instrument, and many pamphlets were published against vaccina-

tion. The causes for the opposition were numerous, probably the most important one being the antagonism of vested interests. Variolation was a lucrative business and vaccination was an invasion of this business. Opposing arguments, moreover, did not operate on an ethical plane, as illustrated by cartoons showing vaccinated children growing horns. A prominent surgeon even advanced a more brutal argument, viz. that "in the populous parts of the Metropolis, where the abundance of children exceeds the means of providing food and raiment for them, this pestilential disease (i.e., small-pox) is considered as a merciful provision on the part of Providence to lessen the burthen of a poor man's family." Others said the data on vaccination were insufficient in that the protection was not permanent, an argument that was obviously valid. Objections on religious grounds were less valid, viz., "that voluntary introduction of disease into the human body was an interference with God's will." Later, compulsory vaccination was looked upon as an infringement upon individual liberty by the State. For these and other reasons antivaccination societies arose and persisted, supported many years later by such individuals as George Bernard Shaw, Alfred Russell Wallace and other well-known figures. Illustrative of some of the opposition is a Report to the House of Commons in 1857, in which it was claimed that "the Compulsory Vaccination Act while dishonoring science invades in the most odious, tyrannical and unexampled manner the liberty of the subject and sanctity of the home; unspeakably degrades the freeborn citizen, not only depriving him of liberty of choice in a personal matter, but even denying him the possession of reason; outrages some of the finest feeling and best affections of the human heart; sets at naught parental authority and responsibility and coerces the parent either to violate his deliberate, cherished, and conscientious convictions, and even his religious scruples."

Despite these opposing points of view vaccination spread throughout the world, and as early as 1803 Sweden passed a law regulating its use. One of the earliest compulsory vaccination acts was in Bavaria in 1807; in 1810 Denmark required it for school attendance and church marriages. It was made compulsory in Russia in 1812, in England in 1840, and in many other countries. It is of interest that in the land of Pasteur it did not become compulsory until 1902.

The problem of transportation of the vaccinia virus to remote places was a formidable one, due to the slowness of ocean travel and consequent loss of the virus. One method was to send children on voyages during which they were vaccinated in series. Thus the King of Spain commissioned three frigates and sent twenty-two children to the New World. Each week two were vaccinated, thus on arrival in Caracas the virus was still active. Some of the children were then taken to South America and others to Central America. One of the ships going to Peru was wrecked but all on board were rescued and it was possible to vaccinate at least 50,000 persons along the Peruvian coast. Other ships went on around the world, carrying the virus to the Philippines, to China, etc. Another series of volunteers carried the virus to India, by arm to arm passage.

In 1842-45, Negri, in Naples, transferred the cowpox virus to the skin of the calf, and soon this procedure became standard in Europe and elsewhere. Today glycerinated calf lymph containing vaccinia virus is the commonly used material for vaccination. In the century which followed the development of this method smallpox practically vanished from the civilized world, at least as a serious killing agent. Also with it the antivaccination societies declined, and now vaccination is compulsory whenever smallpox threatens either the public or military interest.

It is of some interest to compare the methods of evaluation of vaccination against cowpox with those currrently used against poliomyelitis. Despite the fact that inoculation with smallpox matter was hazardous, Jenner's first procedure after he had vaccinated James Phipps was to inoculate him with smallpox virus. Both Dr. Waterhouse and President Jefferson did likewise. So far as I know, however, no one today has had the temerity to inject live poliomyelitis virus following vaccination with the Salk vaccine. Instead, reliance is placed mainly on statistical analysis.

Finally, although we cannot hope that the name of Jenner will occupy a place in history comparable to that of his famous contemporary, Napoleon Bonaparte, who did so much to change the face of Europe and presumably at the same time lower the average stature of French man-

hood. But Jenner at least did not die miserably in exile. Twenty-five years after he had made his great discovery, and while still in the active practice of medicine, he suffered the "stroke" which brought his life to an end.

It is pleasant to recall that in the main his great contribution to humanity was warmly appreciated while he was still alive and that he did not suffer the neglect often accorded contributors to human welfare. It is also pleasant to look back and see how a simple country doctor came so simply to the solution of a great human problem, and by its solution, opened the doors to the vaster problems of sanitation, public health and preventive medicine.

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New Exchange Resin and Diet in the Treatment of Uremia

By Raimonds J. Gailitis, M.D. and Gerard Hille Ris Lambers, M.D., Chicago

In the past four years an effort has been made to improve the management of uremia associated with hyperpotassemia by combined dietary management and the use of potassium exchange resins.[1,6] The use of intestinal perfusion, peritoneal irrigation, or the artificial kidney is not always a feasible means of management.[14,9] Simple dietary management and potassium ion exchange resins can be used by any physician with a reliable laboratory at his disposal.

As early as 1950 Elkinton[6] tried to exchange an elevated extracellular potassium by means of ammonium carboxylic resins, thus eliminating the danger of high potassium levels on the heart muscle. Borst[13] used another approach in treating patients with hyperpotassemia due to uremia by giving high carbohydrate, high fat, and low protein diets in an effort to increase glyconeogenesis and restoring intracellular potassium. In anuria or oliguria a rising plasma potassium level results from endogenous protein catabolism with transfer of the potassium ion from the intracellular to the extracellular compartment. According to Gamble[10] the average endogenous consumption of protein during the period of fasting is 70 grams a day. This protein catabolism is increased markedly during febrile states, during postpartum involution of the uterus, postoperatively, and following severe trauma to the body. By giving 100 grams of glucose to the fasting patient this endogenous protein catabolism can be reduced to 40 grams per day. An increase of glucose in excess of 100 grams will not bring about further reduction of protein catabolism but will effect greater glyconeogenesis and promote the restoration of potassium into the intracellular compartment.[12]

Potassium is the major basic ion of the intracellular fluid, averaging about 155 mEq per liter, while an average level is about 3.2 to 5.2 mEq per liter in the serum. Gastric juices and small intestine juices have 33 mEq and 5 to 11 mEq per liter respectively.[12] The body of the 70 kg. man contains approximately 3000 mEq (120 grams) of potassium. Most of this is located within the cells with only 60 mEq (2.3 grams) in the extracellular fluid. Normally there exists a constant ratio between intracellular potassium and nitrogen, which is 2.7 mEq of potassium to 1.0 grams of nitrogen (Reifenstein et al).[8] In protoplasm synthesis, potassium moves into the cells at about the same rate that potassium leaves the cells during catabolism. When 40 grams of endogenous protein are broken down as a result of semistarvation, in uremia for example, and the kidneys fail to eliminate the breakdown in the presence of anuria or oliguria, the nonprotein nitrogen increases in increments of at least 6.4 grams a day.[1] Therefore, in the average 70

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kg. man with a total volume of body water of approximately 49 liters, there would be an expected minimal daily increase of the blood urea level of 28 mg. per 100 cc.[1] Since one gram of protein nitrogen is equivalent to 2.7 mEq of potassium,[8] there is a simultaneous release of 17.28 mEq of potassium from the intracellular into the extracellular compartment.

To minimize these changes, a combined treatment consisting of potassium exchange resins and high carbohydrate, high fat, and low protein diet was used by Evans et al in 1952. They used Bull's and Borst's diets which have the following ingredients:

BULL'S I.V. REGIMEN

(Utilized when patient is unable to take oral feedings)

400 grams of glucose in 1000 cc. of distilled water, given by polythene tube introduced into the superior vena cava.

BULL'S ORAL REGIMEN

(Used when patient has no nausea and can tolerate tubal feedings)

400 grams glucose
100 grams peanut oil or olive oil
1000 cc. distilled water

This furnishes about 2,500 calories and is relatively electrolyte free.

BORST'S DIET

(Used when patient is able to take oral feedings)

150 grams of glucose or sucrose
100 grams of custard powder
50 grams casilan (calcium caseinate)
50 grams of butter
1,500 cc. of distilled water

(Electrolyte content of this diet is 7.5 mEq of potassium, 30 mEq calcium)

These dietary measures fulfill two basic purposes: that of protein sparing action and of increasing glyconeogenesis. These measures, however, are not adequate in all instances to reduce high potassium levels. In those cases the potassium exchange resins can be utilized. The first attempt was made by Elkinton et al in 1950,[6] who gave ammonium carboxylic exchange resin both orally and by retention enema which effected satisfactory exchange of potassium ion with a fall in the serum potassium levels. A reduction of from 20 to 73 mEq of potassium occurred daily, and always exceded the amount of sodium removed.

Evans et al[1] reported five cases treated with combined Bull's and Borst's diets with sodium sulfonic resin which contained 90% sodium, 7% ammonium, and 3% calcium. This resin had a binding capacity of 3.4 mEq of cations per gram of resin.[1] When 45 grams of resin were given by the oral route it exchanged from 0.5 to 1.2 mEq of potassium per gram of resin, or a total of 20 to 75 mEq of potassium per day.

POTASSIUM EXCHANGE USING SODIUM CARBOXYLIC RESIN*

Our experience is limited to potassium exchange using a new sodium carboxylic resin which is charged with the sodium ion in contrast to the ammonium charged, ammonium carboxylic resin which has been described by Elkinton et al. It has several advantages over the previously described resins: (1) The sodium ion is more innocuous than the ammonium ion in uremic patients since ammonia is converted to urea in the liver and the addition of more ammonium ion in the resin would tend to elevate an already high blood urea. By the same mechanism an increased blood urea, which is a neutral cation in comparison to the basic potassium ion which it displaces, would give a consequent increase in an already present acidosis. (2) The sodium ion in the resin is poorly absorbed from the gastrointestinal tract and the only sodium absorbed is most likely that which is exchanged for the potassium ion. This slight increase of sodium ion concentration is negligible as far as altering the over-all sodium level in the extracellular spaces. (Evans et al[1]) (3) The ammonium ion which usually is in high concentration in uremic patients can combine with the sodium carboxylic resin and be excreted by the gastrointestinal tract, thus reducing the level of ammonium containing compounds in the body.[1]

COMBINED BORST'S DIET AND SODIUM CARBOXYLIC RESIN

The resin was administered orally in four patients in which Borst's diet was used as a vehicle to make about 10% suspension of the resin; 15 grams were given three times a day. The combined use of Borst's diet and sodium carboxylic resin was found to be best suited for the following reasons: (1) The diet is free of or low in undesirable ions such as potassium, ammonium, sodium, or chlorides. (2) It is protein sparing. (3) It increases glyconeogenesis. (4) It furnishes a high caloric diet.

*Sodium Carboxylic resin furnished by Eli Lilly Company, Indianapolis, Indiana

CASE REPORTS

CASE 1. A. P., a 60 year old white male was hospitalized on March 16, 1954 because of nausea, vomiting, headache, and pain below both costal margins. These symptoms appeared following an ingestion of approximately 15 cc. of furniture polish 10 days prior to hospitalization. The patient had been in good health and had been doing heavy physical work. Despite vomiting, he had passed a normal amount of urine before admission.

Physical examination revealed a well nourished white male, slightly dehydrated, who was complaining of nausea and headache. Blood pressure was 155/88 mm.; pulse rate was 66 and regular; $A_2 = P_2$. Examination of the lungs revealed occasional fine crackling rales in both bases. There was localized epigastric tenderness in the abdomen and both costovertebral angles were tender on pressure.

Urinalysis was negative for albumin, sugar, and acetone but showed a specific gravity of 1.010, a pH of 6.0, 2-4 white cells per hpf, and 1-3 red cells per hpf. The creatinine was 10.0 mg. %, nonprotein nitrogen 133 mg. %, serum potassium 5.6 mEq, and bromsulfalein showed 21.4% retention.

In view of his uremia and the accompanying hyperpotassemia, combined Borst's regimen and sodium carboxylic resin, 15 grams, were given t.i.d. for seven days. The resin was then discontinued because of the weakness experienced by the patient. On the fifth day of treatment the potassium ion level had fallen from 5.6 mEq to 3.8 mEq. Creatinine was 3.1 mg. %, and nonprotein nitrogen was 71 mg. %. Clinically he improved markedly two days after the treatment was instituted and his progress was a rather dramatic one. He continued to put out 1,500 to 2,000 cc. of urine with a fixed specific gravity of 1.010 to 1.012. Routine urinalyses failed to reveal any albumin, casts, or red cells with the exception of the first specimen on admission. His blood pressure ranged between 155/80 mm. to 140/80 mm. and was 145/90 mm. on discharge.

On the ninth day of hospitalization his creatinine was 2.3 mg. % and his nonprotein nitrogen was 46 mg. %. A Mosenthal test revealed a fixed specific gravity ranging between 1.010 and 1.012. He was now symptom free. On the 13th day of hospitalization, seven days following a discontinuation of resin treatment, his serum potassium had gone up to 5.1 mEq. His nonprotein nitrogen, however, was 43 mg. %, with creatinine of 2 mg. %.

He was discharged on the 14th day and has remained in good physical condition and returned to his work.

CASE 2. H. P., a 57 year old male, was hospitalized because of shortness of breath, ankle edema of six weeks' duration accompanied by headaches and polyuria. Neck dissection and laryngectomy had been performed two years previously for carcinoma of the vocal cord. Shortly after this, according to his history, he became ill with acute glomerulonephritis. He appeared to be chronically ill on admission.

Physical examination was essentially negative except for four plus ankle edema and fine crackling rales in both lung bases. His blood pressure was 190/120; pulse 84 and regular; temperature 98 degrees F. Examination of the blood revealed a red count of 3,700,000 and white count of 5,800. Urinalysis showed a specific gravity of 1.016; 40-50 white cells per hpf; four plus albumin. Nonprotein nitrogen was 52 mg. %; total protein 5.71, with 3.20 gm. % albumin and 2.51 gm. % globulin.

The patient's condition improved on a low salt diet and mercurial diuretics. A urinalysis done on the seventh day after admission revealed a specific gravity of 1.015; albumin four plus; 1-3 white cells per hpf; 50-60 red cells per hpf; 10-15 hyaline casts. The red blood count was 4,070,000; the white count 6,900; and there was 90% hemoglobin. Chest X-rays showed evidence of left ventricular enlargement and an electrocardiogram revealed coronary sclerosis.

The patient was permitted to go home, but was readmitted three months later. According to his history he had gotten along fairly well until about six weeks prior to readmission, at which time he noticed loss of appetite, fatigue, and headaches.

Physical examination revealed crackling rales in both lung bases. Only slight ankle edema was noted. Blood pressure was 180/90 mm. Urinalysis showed a specific gravity of 1.008; acetone and sugar negative; albumin four plus; 4-8 white cells per hpf. Red blood count was 3,000,000, white count 7,800, and there was 60.0% hemoglobin. The Kahn was negative. Creatinine was 3.8 mg. %; nonprotein nitrogen was 64 mg. %; blood urea was 41 mg. %; sodium 141 mEq; potassium 5.3 mEq; chlorides 111 mEq. He was given digitoxin, mercurial diuretics, and placed on a low salt diet without any improvement.

In view of his uremia and slight hyperpotassemia, he was given combined Borst's diet and sodium carboxylic resin. The total resin dose prescribed was 60 grams, but due to an error 180 grams were given with a dosage of 15 grams t.i.d. for four days. As a result the patient became lethargic, generally edematous, and weak. Numerous extrasystoles were noted. He developed diarrhea and the fecal material was white and soft having the appearance of the resin which was administered. His blood pressure was 150/76 mm.

He was given 10 grains of potassium chloride, t.i.d., along with orange juice, low salt diet, and 750 cc. of Borst's diet. His condition remained poor for the following two days. Blood chemistry revealed 2.6 mEq of potassium, 154.5 mEq of sodium, 94.9 mEq of chlorides, 33.9 mEq carbon dioxide, 3.2 mg. % creatinine, and 49 mg. % nonprotein nitrogen, showing a decrease in the potassium level with marked sodium retention.

On the sixth day following discontinuation of the resin treatment his condition was markedly improved, and he was up and around. The diarrhea

had ceased, and the calcium was 4.1 mEq, chlorides 106 mEq, carbon dioxide 30 mEq, sodium 143 mEq, and potassium 3.2 mEq. The red count was 2.15 million, white count 6,300, and hemoglobin 53%.

He was given a transfusion of one pint of blood, after which there were 3.24 million red cells, 6,000 white cells, and 70% hemoglobin. On discharge the potassium was 4.4 mEq, creatinine 2.7 mEq, nonprotein nitrogen 63 mg. %, and blood urea 42.5 mg. %. His blood pressure was 150/85 mm. and a Mosenthal test showed a fixed specific gravity of 1.005 to 1.008.

CASE 3. A 53 year old housewife was admitted to the hospital with chief complaints of vomiting for one day, numbness of the right foot for two days, severe headache, and edema of both feet for six months, shortness of breath, and abdominal pressure with nocturia. She thought she had lost eight pounds during the previous eight months.

Other complaints were: flatulence, constipation requiring continuous use of laxatives, hematuria, chills on occasion, pain in the chest, expectoration of whitish-yellow phlegm, restlessness, depression and episodes of dizziness.

Physical examination revealed a well developed, well nourished female who reclined quietly in bed. Her pulse was 88, respirations 32, temperature 98.4°, and blood pressure 240/110. The tongue was dry. The heart revealed a sinus rhythm with tones of good quality and no murmurs. There was enlargement to the left. The lungs were clear. The liver was palpable and moderately tender. No peripheral edema was noted.

Admission clinical laboratory findings were as follows: 3.81 million red cells; 6,800 white cells; 69.2% (10.8 grams) hemoglobin; 88 segmented cells, 9 lymphocytes, 1 monocyte, and 1 stab cell. Specific gravity of the urine was 1.010 with four plus albumin and negative sugar and acetone. There were many white and red cells per hpf. The Kahn test was negative. Blood chemistry showed 6.35 total protein with 3.5 albumin and 2.79 globulin. Urea nitrogen was 64 mg. %, nonprotein nitrogen 145 mg. %, creatinine 2.9 mg. %. The serum sodium was 149 mEq per liter, potassium 4.4 mEq, and carbon dioxide 11 mEq. A cultured catheterized specimen of urine revealed Escherichia coli.

An electrocardiogram revealed a sinus rhythm with slight left heart strain. Hospital care included a low salt, low protein diet with sedation and absolute bed rest. Except for being able to rest more comfortably, her symptoms were unimproved the first six days. She was then placed on the Borst's diet with an additional low salt, low protein meal per day. Her general condition was good and she tolerated the regime well. She had restful nights, although occasionally she experienced headaches. During this period the blood pressure remained around 200/100 mm.

Seven days after instituting the Borst's regime her blood nonprotein nitrogen was 68 mg. %, creatinine was 3 mg. %. Serum sodium was 145 mEq per liter and serum potassium 5.4 mEq per liter. At this time sodium carboxylic resin was prescribed, with a dosage of 15 grams given t.i.d. for six days. Her general condition improved with only a subjective complaint of dizziness on one day of treatment. Occasionally she experienced periods of weakness, but at no time was there any evidence of muscle weakness. Following the sixth day of the carboxylic resin she had 32 mg. % nonprotein nitrogen, 2.3 mg. % creatinine, 4 mEq of potassium. Blood pressure was 220/110 mm. Urinalysis revealed a four plus albumin, 10-20 red cells per hpf, a pH of 7.5, and specific gravity of 1.004. She was clinically improved and arrangements were made for discharge.

Because of a blood count of 3.1 million red cells with 9.8 grams of hemoglobin, a transfusion of whole blood was given which was completed with no untoward effects. During the night she was resting comfortably. At 7:00 a.m. on the next day she was found dead in bed.

Autopsy showed a subacute glomerulonephritis and hypertrophy of the left ventricle. The immediate cause of death was not established.

CASE 4. A 65 year old white female was admitted to the hospital complaining of almost complete loss of eyesight for the last two years, progressive shortness of breath for one and one-half years, anorexia, nausea, vomiting, and weight loss for one year, and generalized weakness for a few months. There were no complaints involving the urinary tract, and past history revealed no kidney disease.

Physical findings on admission revealed the blood pressure to be 205/100 mm. The pulse was 88 with regular sinus rhythm. There was slight cardiac enlargement, fluid in the left pleural cavity, a grade III pitting edema over both tibia, and bilateral retinal detachment.

Laboratory findings on admission were four plus albumin, specific gravity of 1.017, 1-3 white cells per hpf, 2-4 red cells per hpf. There were 8-10 coarsely granular casts per hpf. Blood count showed 2.54 million red cells, 6,800 white cells, 7.5 grams (47.9%) hemoglobin, and a normal differential count. Blood chemistry showed 90 mg. % nonprotein nitrogen, 81 mg. % glucose. Total protein was 6.12 gm. % with 3.58 gm. % albumin, and 2.54 gm. % globulin. The sedimentation rate was 25 mm. in one hour. Plasma electrolytes showed 138 mEq sodium and 5.6 mEq of potassium.

The patient was placed on 1,500 cc. of Borst's diet with 15 grams of sodium carboxylic resin given t.i.d. by mouth. This was supplemented by a low protein breakfast. Seven days later the plasma potassium was 4.4 mEq, and nonprotein nitrogen was 73 mg. %. Two low protein, low salt meals plus 750 cc. of Borst's diet were started on the 7th day. Six days following this regimen the plasma potassium was 4.8 mEq and the sodium 138.5 mEq. The nonprotein nitrogen was 76 mg. %. She was treated with this amount for 15 days.

Her condition improved gradually, with increased appetite and disappearance of her nausea. She had no ankle edema or pleural effusion. She was given Roncovite®* for anemia. Two days before her discharge from the hospital she was digitalized and continued on a daily dose of 0.1 mg. digitoxin. She was advised to continue with her combined Borst's and low protein, low salt diet at home.

For three months following discharge the patient felt well. She then began to experience extreme tiredness, loss of appetite, nausea, and vomiting. On returning to the hospital for a check-up, her blood chemistry showed 82.3% hemoglobin, 4.26 million red cells, 8.5 mg. % creatinine, 139 mg. % nonprotein nitrogen, 95 mg. % urea nitrogen, 12.9 mEq carbon dioxide, 118 mEq chlorides, 5.4 mEq potassium, 4.7 mEq of calcium, and 139 mEq of sodium. Her urinalysis revealed a three plus albumin with 1.006 specific gravity and 7-10 white cells per hpf with fine, granular casts. She was hospitalized immediately.

In view of the azotemia associated with mild hyperpotassemia, the patient was given combined Borst's diet and carboxylic resin for four days. Following this there was a marked reduction in the serum potassium level of 5.4 mEq to 2.8 mEq. Nonprotein nitrogen was reduced to 105 mg. %, creatinine to 7.1 mg. %. She improved clinically and was discharged from the hospital to continue on Borst's diet with low protein, high carbohydrate meals at home, plus Roncovite for her anemia. To date, Roncovite has controlled her anemia during her stay at home.

COMMENTS

The four cases presented represent patients with kidney and cardiovascular lesions of varying severity:

Case I with chronic nephrosclerosis with a superimposed lower nephron nephrosis apparently precipitated by ingestion of furniture polish.

Case II with chronic glomerulonephritis and congestive heart failure due to hypertensive heart disease.

Case III with subacute glomerulonephritis and severe hypertensive cardiovascular disease.

Case IV with chronic pyelonephritis and hypertensive cardiovascular disease.

All four cases presented hyperpotassemia and high nonprotein nitrogen determinations.

With the exception of case I, all had a rather profound anemia, which one would expect from the chronicity of their kidney lesions.

All cases showed a marked response to the combined therapy of Borst's diet and sodium carboxylic resin.

Case I represented an acute azotemia with a superimposed lower nephron nephrosis, an NPN of 133, creatinine of 10 mg., and potassium of 5.6 mEq. There were no urinary abnormalities and no anemia, which indicated this was an acute and not a chronic uremia. As early as five days following treatment with the combined regimen, the nonprotein nitrogen had fallen to 71 mg. and the potassium to 3.8 mEq, with a concomitant improvement of clinical condition. Following discontinuation of resin therapy the potassium returned to 5.1 mEq, but the nonprotein nitrogen declined to 46 mg.%. Other than a fixed specific gravity of the urine as determined by the Mosenthal test, there were no other abnormalities and the patient returned to his job and has remained asymptomatic.

Case II had chronic glomerulonephritis with a moderate azotemia with nonprotein nitrogen of 64 mg.% and hyperpotassemia of 5.3 mEq. The patient was given the combined Borst's diet and sodium carboxylic resin. Due to an error more than three times the prescribed dose of resin was administered and the patient experienced severe weakness that progressed to semi-coma, ventricular extrasystoles, and diarrhea. There was a concomitant fall in the potassium from 5.3 mEq to 2.6 mEq. The sodium rose from 141 mEq to 154.5 mEq. Resin therapy was discontinued and potassium chloride and orange juice were administered. His condition remained critical for several days, but he gradually improved and was discharged. Potassium and creatinine levels were lower than prior to treatment but there was very little change in blood urea and nonprotein nitrogen levels.

Case III showed marked azotemia and hypertension which was dramatically reduced by the combined diet-resin therapy. After being on Borst's diet alone for seven days the nonprotein nitrogen was reduced from 145 to 68 mg.%, but there was a concomitant rise in the potassium level from 4.4 mEq to 5.4 mEq. Six days after using the sodium carboxylic resin in conjunction with the Borst's diet, the nonprotein nitrogen fell to 32 mg.% and the potassium level was 4 mEq per liter. Clinically the patient felt better than she had for some time. One pint of blood was given the day prior to her contemplated release to correct anemia. Without apparent com-

*Roncovite—Lloyd Brothers Company, Cincinnati, Ohio

plications of the blood transfusion or other demonstrable reason, the patient suddenly expired. Postmortem examination failed to reveal the immediate cause of death.

Case IV. The last case described received the combined regimen twice with a three month interim, with a striking reduction of both nonprotein nitrogen and potassium levels. During the initial treatment the nonprotein nitrogen fell from 90 to 73 mg.%, and potassium from 5.6 to 4.4 mEq after seven days of treatment. Normal red cell count and hemoglobin were maintained with Roncovite. After three months on Borst's diet at home the nonprotein nitrogen rose to 139 mg.% and the potassium to 5.4 mEq per liter. After four days on the combined diet-resin therapy the nonprotein nitrogen fell to 105 mg.% and the potassium to 2.8 mEq per liter. She was discharged the second time symptomatically improved with instructions to follow the Borst's diet supplemented with a low salt, low protein diet at home.

SUMMARY

Treatment of the uremic state, regardless of the cause, presents problems that are difficult to manage even in the most specialized centers. We have presented a resume of treatment and the case histories of four patients who were treated by Borst's diet and potassium exchange sodium carboxylic resin with rather striking decreases in potassium levels and improvement of their clinical condition.

Potassium exchange, using sodium carboxylic resin, was successful in decreasing elevated serum potassiums as early as the third day after instituting therapy.

The Borst's diet provided a high caloric, low electrolyte means of alimentation, which most patients found palatable. This was supplemented by a high carbohydrate, low protein meal once daily as the condition of the patient permitted a greater intake of food.

Roncovite (iron and cobalt) was a potent bone marrow stimulant in Case IV.

This mode of therapy can be utilized by any physician who has access to a reliable clinical laboratory where accurate electrolyte studies can be obtained. It must be emphasized that the electrolyte status be followed closely and the resin be discontinued as soon as the potassium level reaches 4 mEq per liter or a serious hypopotassemia may result.

Though the reduction of potassium and nonprotein nitrogen levels is not the sole aim in management of uremic patients, there is no doubt that in certain cases this reduction is life saving, and instrumental in decreasing the morbidity of the disease.

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Can the British Medical Scene Be Transplanted to the United States?

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ONE of the strongest arguments for state medicine is that British medicine is providing more adequate care than is available under the American system; that chaos did not occur when the state took over; and, therefore, we should subscribe to their type of scheme. All too often one reads in the press of a physician who, upon returning from England, gives his opinions regarding the system there. The physician interviewed may have spent only four or five days in England, but his opinion is quoted as valid.

The statements and opinions that follow are based on the following qualifications: I interrupted my training in plastic surgery for three months in 1949 to observe some plastic surgical centers in England. I spent nearly three months going about the country and was so impressed with the type of surgery I saw there, I returned in 1952 to spend nine months working as a trainee in one of the more aggressive plastic surgical centers. My views after the rather hurried three month's trip in 1949 differ markedly from my opinions gleaned during the nine month's stay in 1952 and 1953. All too often one's thoughts are colored by what one wishes to hear. We hear and see only what we want. In 1949 I looked only for faults for I knew that state medicine could not be anything but inadequate. I would like to report my feelings after a year as an integral part of the scheme. I publish this information to be used as argument against the ill advised desires of some who feel that transplantation of the British system would be possible. On the other hand, I would like to be perfectly fair in my reporting and give the British credit where credit is due.

In the watershed of Chicago's newspapers, our feelings are colored by a dominating press. We are enlightened in regard to British medicine only as this press sees fit. During my entire stay in England, I made every effort to question all whom I met about state medicine. This interviewing went from the depths, the charity patients at some of the hospitals and included most of the passengers with whom I was seated on trains and buses. I talked to a few at the top economic level who could well afford to pay and did pay for private medical care.

First, it is difficult to find similar ground on which to base comparison. Sometimes I wonder whether we have anything more in common with the English than the language. To compare similarities between the two countries is equivalent to trying to find similarities between a Texas cowboy and a London banker. Both are men and both are in business but the similarity stops there. The British are a homogeneous people. Their customs and economies do not differ from area to area, nor do they have great regional differences as we do in America. They are inherently honest, and do not consider it clever to find loopholes in income tax laws or padding expense accounts, much as we consider it rather acceptable here. In the military services, we found materials walking off, and the only explanation was that it was expected. In England there was quite a different attitude. The adhesive tape was used thoughtfully, the thought being that the material belonged to Her Majesty's Government, and should not be wasted.

I think that this even carries over into their political life. Most of the career men in the House of Parliament exist on small salaries compared to those of our legislators. The dignity that goes with office is singularly lacking here, and often our sheriff or political appointees are regarded with derision. I think the conception of our "cop" and the average citizen's attitude towards him, often referring to him as a "flatfoot" or other derogatory names when compared with the English "bobby" who is looked up to by all, illustrates graphically a fundamental difference between the two countries. It is the thing that makes the British waiter take pride in his job, and makes him do his best to see that you get the

best service—quite unlike most of our waiters. In the matter of automobile mechanics, I never had any misgivings at any time when taking my automobile to a British garage to have it repaired. I need not draw the comparison with American mechanics I have met.

Secondly, I believe that the average British citizen is inherently polite. Because of this politeness he would not tell you things he knew you did not wish to hear. I am sure we would do the same to an Englishman living in this country. For example, if we realized his favorable attitude toward the royal family, most of us would find it in poor taste to criticize a monarchy in his presence. I feel that most of the doctors over there know that we are strongly against state medicine and are very careful not to offend us. Another factor in evaluating opinions is national pride. Here in the Chicago area we are very proud of our gangsters; they are bigger and tougher than any others. I think the same would go there; they will tell that their bureaucracy is more muddling and clumsy than any in the world.

I have always tried to evaluate the personal motives of the discussant. As one hears the comments in a locker room in the average American hospital, one would think that the government was absolutely stripping most of the men there, for the chief complaints are that taxes are too high, collections are poor, fees too low, and there are not enough paying patients. Similar complaints were voiced in British locker rooms and I believe that this is just a facet of human character.

The dissimilarities between American medicine as it is today and British medicine began long before the World War I. The panel system was developed there and the assigning of panels and the buying and selling of these, removed a good bit of the personal element from a local practice. A man was considered the doctor for a group of patients in an area. When World War II began, England expected that her major centers would be all but completely wiped out in the first period of the war. In anticipation of this they quickly decentralized the medical facilities in London. Outlying country hospitals were transformed into specialty centers. One became an orthopedic hospital, another a neurosurgical, another a plastic center. Then, as the casualties were sorted out in the raids they were sent to the hospital that dealt primarily with their major injury.

As the threat of the raids became less and casualties began returning from overseas this same system of segregation was kept on. In the course of the war every physician went into government employ no matter what his physical condition, so long as he was able to practice. They were told exactly where to go and what to do; there was no personal choice whatsoever. By war's end mobilization had been established for six years. It would have been much more difficult to go back to a system of free enterprise, but merely a step to carry on as they were. Some are quite bitter about this choice and feel that their leaders (the British Medical Association officers) turned the medical profession over to the Labor government for their own gain, perhaps a knighthood. This is not necessarily true, for both the Labor government and the Conservatives were committed by promise to provide a total medical supervisory program. It was merely a question of which party won and working out the details as to how the scheme would be applied.

The change from total mobilization in World War II to a civilian scheme was not difficult. The general practitioner still takes care of his patients as he did during the war years and when a problem is beyond his scope and needs the attention of a specialist, he merely refers it to one of the specialty centers. At the specialty center the senior man with the wider reputation usually has the largest number of cases personally referred. The patient then is given the alternative of waiting his turn to be admitted (perhaps a year and a half) and to see the senior specialist, or of taking one of the younger men with less of a reputation. The patient even has a further freedom, he can go to the specialist of his choice regardless of his location even though he was referred to the regional specialist.

Each practitioner has the right to decide how much time if any, he will devote to the state scheme, and how much he wishes to devote to private practice. In order to maintain a position in one of the teaching hospitals he must spend a minimum of clinic days at the hospital. All of the teaching hospitals are part of the state scheme.

Private work is done in the nursing homes and clinics. The salary that a man receives varies according to the percentage of time he devotes to

state practice. Private practice, however, is rapidly dribbling away to nothing for several reasons. The tax picture is such that private care means sacrifice. State care is at a high enough level that it seems foolish to pay for a room and bed in a hospital in which one can have "free" care.

The British seem to have thought of everything in organizing this scheme, even to motivation. They have established a system of awards, referred to as Merit Awards. These carry a generous yearly stipend for life. These awards are made by committees from each field on the basis of a man's merits and his contributions toward his particular specialty. There are still the incentives of knighthoods and other honors given to certain men within the profession yearly. There is another psychological stimulant in training more men for jobs than there are jobs available. The system becomes highly competitive and men who do not reecive the jobs must either go into general practice in less desirable districts or leave the country.

Who is dissatisfied with the scheme in England? Everyone seems to complain about it, much as they do about the weather but it is hard to find specific reasons for dissatisfaction. Patients complain about long waits for elective surgery, crowded waiting rooms, and the fact that one must pay taxes and not be able to take advantage of the free care because of lack of illness. Similar complaints can be heard in the waiting rooms of any of our larger clinics. British medical students have little to complain of as they are subsidized to about 90 per cent of their expenses. Residents complain about lack of consultant jobs available when they have finished their specialty training, but they are well paid and their working hours are considerably less than that of their American counterparts.

The general practitioner complains loudly and bitterly about overwork and inadequate facilities to allow him to practice the high caliber of medicine he would like to practice. Aside from the accent one could be listening to almost any American general practitioner. Actually in the scheme he is the only man in a position to increase his earnings by taking on more state work. Until recently his pay was disproportionate to the specialist's but this has been remedied. The specialist complains about high taxes and high expenses and lack of well-to-do private patients. These complaints are also familiar to you.

CONCLUSIONS

The British system of medicine is adequate for England but would be a fiasco if transplanted in America because of the basic differences of economy and culture. Out of fairness to the British, we must admit that their system works for them, but this does not mean that it could possibly work in America. Bearing this conclusion in mind, one is able to counter any argument proposed suggesting that a similar system on a political basis would work in America. Many British doctors feel that their system was foisted upon them by their leaders who saw gain for themselves by turning the British Medical Association over to the Labor government. This is not necessarily true, for all parties in England had committed themselves to some form of state medicine. We must choose our leaders in American medicine with care lest such a thing happen to us.

Gas-Electric Bldg.

The Spleen

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Leon O. Jacobson, M.D.,
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Aaron Josephson, M.D.,
Acting Director, Department of Hematology, Michael Reese Hospital
Louis R. Limarzi, M.D.,
Assistant Professor of Medicine

Doctor Samter: It is a tradition of the Department of Medicine to hold a seminar on the spleen every two years. In 1956, we have divided the subject into three phases: Dr. Leon Jacobson will discuss the role of the spleen in the formation of cellular elements; Dr. Aaron Josephson, its role in their destruction; and Dr. Limarzi, in conclusion, will outline the clinical implications of the experimental data. Dr. Best has kindly agreed to moderate the symposium.

Doctor Best: In 150 A.D., Galen said, "The spleen is an organ of mystery." — I would like to ask Doctor Jacobson to summarize for us the contributions, particularly his own, which have increased, since Galen, our understanding of the physiology of the spleen.

Doctor Jacobson: There have been a few times in the past when I thought that I could discuss intelligently the physiology of the spleen; but as of this moment, my position is one of educated confusion, or, perhaps, I should say of learned confusion. The spleen is a difficult organ to study: to name one problem, it shows a marked species variability. In the mouse, for example, ectopic blood formation in the spleen continues after fetal life. Except for the production of lymphocytes, the spleen of the rat, on the other hand, is a poor blood-former. The spleen of the rabbit normally exhibits very little erythro-, granulo-, or megakaryocytopoiesis. The administration of phenylhydrazine will increase hematopoiesis in the spleen of the rabbit by a factor of 10, but even with this increase, the overall production is minimal.

On the basis of my original experiments, I believed that I had demonstrated beyond reasonable doubt the existence of a humoral factor in the spleen that hastened recovery of the blood-forming tissue of irradiated animals. The factor was thought to regulate or provide something that made it possible for irradiated hematopoietic tissue to resume cellular growth. Shielding of the spleen during irradiation of the balance of the body would of course maintain the integrity of such a factor within the shielded spleen as well as prevent damage to the cellular elements in the spleen.

Recently, Ford and co-workers[1], Lindsley, Odell, and Tausche[2], and Newell and his associates[3] have shown by various techniques that the injected cells survive in the irradiated animal and repopulate the hematopoietic system. In point of fact, it has been demonstrated that hematopoietic cells from the rat will repopulate the irradiated mouse and enhance its survival. Similarly, the injection of hematopoietic cells from the mouse will effectively increase the survival of irradiated rabbits. Perhaps we should have anticipated these interesting developments. For several years it has been known that suppression of hematopoietic function and of the capacity to form antibodies in an animal makes it possible to transfer foreign cells that will survive and grow in a host in which such suppression has been effected. For example, leukemia in a certain mouse strain cannot be transferred to another strain of mouse unless the new host is irradiated before the transfer of leukemic cells is made. In this situation, one must assume that irradiation interferes with the natural resistance mechanism that would ordinarily destroy the injected leukemic cells. It has also been known for some time that hu-

1. Ford, C. E., J. L. Hammerton, D. W. H. Barnes, and J. F. Loutit. Cytological identification of radiation-chimaeras. Nature, 177:452 (1956).
2. Lindsley, D. L., T. T. Odell, and F. G. Tausche. Implantation of functional erythropoietic elements following total body irradiation. Proc. Soc. Exper. Biol. & Med., 90:512 (1955).
3. Newell, P. C., L. J. Cole, J. G. Habermeyer, and P. L. Roan. Growth and continued function of rat marrow cells in X-irradiated mice. U.S. Naval Radiological Defense Laboratory. September 2, 1955. USNRDL-TR-59.

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man cells can adapt slowly in tissue culture to foreign media, e.g., horse serum.

The studies that we and others have done on the inhibition of antibody formation that occurs after irradiation suggest that the recovery from irradiation that has been described briefly may be of both a cellular and humoral nature. The capacity to produce antibodies in irradiated animals can be restored by spleen-shielding, the injection of cells of hematopoietic origin, and, as Jaroslow and Taliaferro[4] have shown, incubation of the antigen with cell-free extracts of spleen before injection.

Doctor Josephson: The role of the spleen in the destruction of cellular elements of the blood has received a great deal of attention during the past decade. It is not easy to study the spleen — since its function is not known, it has been difficult, if not impossible, to distinguish pathological from physiological activities. In addition, many of the basic experiments have been done in experimental animals and cannot be immediately applied to man. Fortunately, new investigative techniques, for instance the study of abnormal proteins and of immune mechanisms in hematology, have added a great deal to our knowledge in recent years.

Actually, five physiologic functions have been attributed to the spleen. Of these, the first (1) — hematopoiesis — has been amply covered, and brought up to date by Doctor Jacobsen. The functions of the spleen which are most frequently mentioned are its ability to serve as a reservoir for the cellular elements of the blood and to sequestrate red blood cells. In 1924, Barcroft and Barcroft suggested that the spleen can store and release the formed elements of the blood. It is now quite certain, however, that their conclusions which were based on studies in dogs and cats are not directly applicable to man. In fact, it has been clearly shown that the spleen of normal subjects is of little or no importance as a reservoir organ (Ebert and Stead 1941, Nylin 1947). Wiseman and Doan have suggested that epinephrine contracts and extrudes the cellular elements. Serial testing failed to confirm the original conclusions; and results with splenectomized patients have shown the same or similar results. Doan and others have tried to demonstrate a difference in the quantity of cells in the splenic vein and splenic artery; but their findings have become questionable since refined techniques, particularly the use of syringes coated with silicones, have increased the accuracy of experiments of this type.

(2) The removal of plasma and the concentration and sequestration of red blood cells, on the other hand, through splenic sinus filtration is probably of physiologic importance. Prankerd, Altman, Finch and Gabrio have shown in recent years what happens to erythrocytes which are trapped in the spleen. In hereditary spherocytosis, red blood cells show a deficient glycolysis. If the cells are trapped in the spleen — with concomitant stasis and absence of sugar from the environment — sphering and hemolysis occur. Splenectomy inhibits this process. If one transfuses the blood of the splenectomized patient into a normal non-splenectomized individual, the transfused red cells show a markedly diminished survival time. In other words, the primary defect exists within the erythrocytes — the spleen acts only as a secondary site of destruction, as a graveyard, but is not involved in the etiology of the disease itself.

Until recently, it has not been understood how the spleen can differentiate between normal and sensitized red blood cells of apparently similar morphology and in vitro behavior. Jandl has shown that homologous Rh-positive red cells if sensitized with anti-Rh serum are selectively retained by the spleen of both Rh-negative and Rh-positive individuals. The addition of albumin or other large anisometric molecules to a suspension of sensitized erythrocytes seems to encourage their agglutination. Even though these experiments offer conclusive proof that the spleen can participate in the destruction of red blood cells, such destruction does not seem to be one of its important functions in the normal individual. Splenectomy in a hematologically normal person does not produce a prolongation of the erythrocyte survival time. It does cause changes in the red blood cells, however, which should be briefly discussed. Howell Jolly bodies, Cabot rings, leptocytes and siderocytes appear. Dacie explains the appearance of siderocytes as the result of the loss of a splenic accelerating factor which controls the final stages of the incorporation of iron in the hemoglobin.

4. Jaroslow, B. N. and W. H. Taliaferro. The restoration of hemolysin-forming capacity in X-irradiated rabbits by tissue and yeast preparations. J. Infect. Dis. 98:75 (1956).

Crosby, on the other hand, feels that the spleen is able to filter selectively red blood cells with shape abnormalities from the blood stream. Crosby based his conclusions on studies of the rate of disappearance of siderocytic granules after transfusion of siderocytes into a normal individual; and rather elaborate studies of the retention of Cr51 labelled erythrocytes in the spleen are now in progress.

(4) The phagocytic and reticuloendothelial function of the spleen includes not only red blood cells, but foreign bodies such as India ink, parasites, effete or dead cells and cell fragments which are removed and digested by the splenic macrophages and the reticulo-endothelic cells which are part of the splenic sinuses.

The spleen does not apparently destroy active and functioning blood cells under normal conditions. It is true that Doan and his associates maintain that in idiopathic thrombocytopenic purpura (ITP) the spleen may show active phagocytosis of platelets, but the histopathologic evidence is scanty, and the majority of hematologists are unwilling to accept their conclusions. One ought to mention in this respect the interesting findings of Bierman and his coworkers as well as of Weisberger & Heinle who established the role of the lung in the removal of platelets and granulocytes from the circulating blood.

(5) The concept that the spleen has a hormonal function has been proposed mainly by Dameshek and his co-workers. Actually no one has been able to isolate any splenic hormone which will control cellular activity or undo the effect of spenectomy: this, however, might be simply due to the lack of our ability in preparing such an extract. The evidence for the existence of a hormone is derived from the study of spleen and bone marrow in various cytopenic conditions before and after splenectomy. In primary splenic neutropenia, the bone marrow is filled with granulocytes. The granulotopenia is either due to an arrest in the maturation of the granulocytes or to a block in their delivery — a condition which is corrected by removal of the spleen. Another example: in ITP Dameshek and Schwartz have shown an increase in nonfunctioning megakaryocytes which disappears after splenectomy.

It has been clearly demonstrated that the spleen produces antibodies, e.g., auto-immune substances which can damage the formed elements of the blood. After the damage has been done the spleen might again fulfill its secondary function to remove the damaged cells from the circulation. Certainly, the spleen is not the exclusive site of antibody formation: in autoimmune hemolytic anemia antibody titers may remain unchanged after splenectomy whether or not the hemolytic process is affected. Splenectomy has been recommended in these conditions if the uptake by the spleen of Cr51 tagged red blood cells has been high.

Similarly the presence of anti-platelet antibodies has been demonstrated in ITP (Harrington, Stefannini and others). The spleen is involved, but again its involvement is secondary. Patients who suffer from ITP might have a normal or even high platelet count after splenectomy. If plasma of these patients is injected into normal non-splenectomized individuals, the recipients develop thrombocytopenia or thrombocytopenic purpura. There are many studies under way to clarify the basic pathophysiology of this disease. Techniques for the demonstration of platelet agglutinins, for instance, are continuously improved and refined; and the common finding of a positive Coombs test in these conditions — demonstrated by Evans, Duane, & Fisher — is under investigation.

In summary then, it would seem that the spleen has an important part, usually a secondary role, in cellular destruction. In diseases which are aided by splenectomy, the removal by the spleen of morphological or functionally abnormal cellular elements from the blood can not be considered part of its normal function: it reflects an abnormal "dysplenic" state. It seems important to make this distinction between a simple overactivity which might contraindicate removal of the organ and its dysplenic behavior which would recommend it.

Doctor Best: When the clinician comes to regard the problems of the individual patient, there are two recurrent questions concerning the spleen: (1) is it palpable, and (2) should it be removed? The latter question will be discussed by Doctor Limarzi.

Doctor Limarzi: Clinical experience has established the value of splenectomy in the treatment of three main types of hematologic diseases:

(1) hemolytic disorders; (2) hemorrhagic diseases associated with thrombocytopenia in the presence of normal or increased numbers of bone marrow megakaryocytes; and (3) hypersplenic states associated with splenomegaly. Although splenectomy is successful in many of these conditions, in none is there a primary disorder of splenic function. Splenectomy is uniformly successful in hereditary spherocytosis. In acquired auto-immune hemolytic anemia, splenectomy has resulted in complete recoveries in less than 30 per cent of the cases. Splenectomy should be performed if blood transfusions and steroids have failed to produce a remission. Relapse can occur at a later date, especially if the Coombs test remains positive. In the hypersplenic hemolytic anemias without antibodies and in certain cases of leukemia and lymphomas with occult type of hemolysin, splenectomy may prove effective.

Splenectomy in idiopathic thrombocytopenic purpura is followed by good results in about 85 per cent of the cases. The administration of steroids in cases of idiopathic thrombocytopenic purpura may produce a remission. In most cases, the remission is of short duration. The steroids have proven useful in the preparation of patients for splenectomy.

Splenectomy is not indicated in the acute cases unless control by blood transfusions and steroids proves ineffective. In children, spontaneous recovery is the rule; thus splenectomy in children should be reserved for cases of uncontrollable bleeding and chronic recurrent purpura. It is our experience that intracranial hemorrhage is more commonly a complication in patients of the older age group. The older the patient, therefore, the less justifiable it is to employ expectant treatment. In secondary thrombocytopenic purpura associated with Boeck's sarcoid, tuberculosis disseminated lupus or gold therapy intoxication splenectomy has at times proven successful.

Splenic neutropenia and pancytopenia associated with active bone marrow and splenomegaly, usually regarded as primary or secondary hypersplenism, have shown a hematologic cure or improvement following splenectomy. In this group are instances of Felty's syndrome, Hodgkin's disease, Gaucher's disease, leukemia, lymphosarcoma, tuberculosis of spleen, Boeck's sarcoid, etc. In Banti's syndrome or congestive splenomegaly, splenectomy alone is rarely successful. For the past several years, we have not performed splenectomy in Banti's syndrome unless a porto-caval or spleno-renal shunt was performed at the same time. In our experience primary hypoplastic anemia without splenomegaly rarely improves following splenectomy. The operation has proven more successful in those cases with a palpable spleen and a moderately active bone marrow. Myelofibrosis with myeloid metaplasia may result in a tremendous spleen. Splenectomy is indicated if the organ becomes a mechanical embarrassment or with the occurrence of marked hypersplenic effects. It should be emphasized that the results of splenectomy can not be predicted in any one case prior to removal of the spleen.

Doctor Best: The seminar is now open for discussion. I will take the chairman's prerogative of asking the first question. Doctor Jacobson, in aplastic or aregenerative anemia would you have the temerity to give the patient total body irradiation and then attempt a bone marrow transplant?

Doctor Jacobson: No.

Doctor Walter Wood, Fellow in Preventive Medicine: Doctor Limarzi, is the predictability of the value of splenectomy as hopeless as you suggest? Did not the Mayo group describe a steroid test recently?

Doctor Limarzi: I believe that the effects of splenectomy are, at least in part, predictable. I have indicated the beneficial effects of the removal of the spleen in certain blood disorders. On the other hand, a large clinical experience has played a very important part in our decision as to whether splenectomy is expected to improve the patient's condition. Steroids can not be used as a test to determine the advisability of splenectomy. In a patient with idiopathic thrombocytopenic purpura, there may be little or no rise of the platelets. Yet in the same patient following splenectomy, there may be a good platelet response. In other words, a failure to obtain a rise in the platelet count after steroids cannot be considered a contraindication to splenectomy.

Doctor Wood: Doctor Jacobson, I would like to ask a question which, after so much discussion, might sound facetious, but it is meant seriously: do you believe that the spleen *has* a function?

Doctor Jacobson: I do not know.

Anesthetic Management for Maxillofacial Surgery

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ANESTHESIA for maxillofacial surgery varies, depending upon many factors such as age, whether the case is traumatic, nontraumatic, whether it is elective or an emergency, and whether there are complicating factors such as shock or obstruction of the airway. Since this subject is so broad, it might be wise to deal with that phase having the widest interest: the management of the patient who has a traumatic injury to the maxillofacial area.

In general, local or regional anesthesia is preferable, probably safer than general anesthesia. Where possible, therefore, local or regional anesthesia is the method of choice. However, in a certain percentage of patients, because of the extent of injury, inability on the part of the operator, lack of co-operation on the part of the patient, or similar causes, local anesthesia may be either contraindicated or nonapplicable. Here, general anesthesia may be administered safely and efficiently.

Regardless of the type of anesthesia, a complete history and physical must be performed prior to giving anesthesia. The history should include questioning as to previous operations and anesthetics, drugs, diseases, injuries and accidents. One must avoid a natural tendency to hurry to repair the results of the trauma. It must not be done without a careful evaluation of the patient. A search must be made for evidence of head injury such as fractures, concussion, or hemorrhage. Shock should be corrected prior to surgery. Frequently the only evidence of shock is a slight nervousness, tachycardia, restlessness, and irritation. Head injury is a common complication in these cases. Blood loss may be insidious and the amount often is not appreciated by the surgical team. If it is thought that the emergency is severe enough, the hazard of waiting must be weighed against those of immediate intervention.

Chest and lung injuries occur coincidentally, but little external evidence of any consequence may be present except tachycardia, and nervousness that may be interpreted as shock. This is seen most frequently in steering wheel accidents.

One must be sure that there is no associated abdominal injury. A perforated viscus may be missed because only a slight bruise over an area not complain because of the shock or the more obvious injury in the facial area.

Respiratory obstruction is probably the most hazardous complication that occurs in the traumatic maxillofacial case. Any case showing respiratory difficulty is an emergency and immediate steps must be taken to overcome the obstruction. This may be done by appropriate splinting, traction on the tongue, or external fixation of the jaw. Tracheotomy may be a life-saving procedure when trauma to the maxillofacial area is extensive. These patients may have been unconscious, blood has trickled into the posterior pharyngeal area, and large quantities of blood have been aspirated into the lung. In other instances, aspiration into the bronchi of vomitus has occurred at the time of injury. Careful evaluation as to contamination of the respiratory passages must be made prior to surgery.

ANESTHETIC PRINCIPLES FOR MAXILLOFACIAL ANESTHESIA

Regardless of the type of anesthesia, the following features are common or desirable to all general anesthesia for maxillofacial surgery:

1. Ideally, there should be little equipment around the face area so that the surgeon may work in a clear, unobstructed field. This is best accomplished by the use of the endotracheal technique. This may be done trans-orally, trans-nasally, or trans-tracheally.

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Presented before the Section on Eye, Ear, Nose and Throat 115th Annual Meeting, Illinois State Medical Society, Chicago May 18, 1955.

2. It is desirable to have a sterile field in the area of surgery. Even though it is true that a sterile field cannot be maintained in many instances, attempts should be made to avoid contamination of all types. The endotracheal technique would seem to be ideal for this purpose.

3. The maintenance of a patent airway is an absolute and irrevocable requirement for all anesthesia. In these cases it is frequently difficult to maintain an adequate airway. However, it must be emphasized that no patient should be put to sleep until the airway is assured and guarded. In many instances it is necessary to insert an endotracheal tube "under topical anesthesia" when the patient is awake, prior to starting the actual anesthetic procedure.

4. One should have the ability to aspirate from the nasal and oropharyngeal passages as well as those secretions that have accumulated in the tracheobronchial tree. This means that good suction, aspiration catheters, and an endotracheal tube should be on hand at all times.

5. It would seem as though light planes of anesthesia would be adequate for most work in and around the head and neck. Since muscular relaxation is not required, light planes are not only adequate but desirable. Ethylene, nitrous oxide, and similar weaker agents properly supplemented should be adequate for most of these cases.

6. In many instances, a nonexplosive technique would certainly be desirable so that one can, if desired, utilize such things as electric drills and other equipment in and about the head, as well as cautery. This would be best accomplished by the use of nitrous oxide with suitable supplementation by an intravenous route.

7. It is easy to traumatize an area that has sustained severe damage. Therefore, when the mask is applied to the maxillofacial injury, one must be extremely cautious lest obstruction, bleeding, or infection be caused by this mask. Intubation, using topical anesthesia, is frequently carried out so as to avoid trauma from the mask.

8. Prior to the onset of anesthesia, as little sedation as possible must be used as excess sedation, which is so frequently used in traumatic cases, will potentiate shock. In addition, there is the danger of respiratory depression which may not only potentiate shock but actually endanger life. Since many of these individuals actually do not have pain, narcotics should not be given. When pain is a real problem, narcotics may be given in the minimal doses compatible with the welfare of the patient.

9. During the time the patient is being prepared, blood should be drawn for cross-matching and adequate blood should be on hand prior to surgery. It may not be necessary; occasionally it is life-saving.

10. An adequate infusion system should be started so that transfusions with blood, plasma, or whatever intravenous fluids are necessary may be given with ease. This should be done prior to surgery because once shock has occurred, it then becomes extremely difficult to start an infusion. Where good veins are not easily accessible, cutdowns of the veins should be carried out under local prior to the onset of anesthesia. Large bore needles, approximately 15, 16, or 17 caliber, should be utilized in any case in which shock is a potentiality. It does little good to have blood available and not be able to get it in quickly. A method of putting the blood in under pressure should be available in all cases where hemorrhage or shock is a possibility.

11. Even though sedation may frequently be omitted, the omission of atropine or similar drying agents is usually an error. True, a tachycardia is undesirable, but with small, divided doses given carefully, an adequate amount of of the abdomen may be present and the patient atropine can be administered without the development of too severe tachycardia.

12. No patient should be put to sleep until one is sure that the unconsciousness will not endanger the airway. When some obstruction already exists, the use of intravenous Pentothal® or similar agent must be avoided at all costs. Too frequently secretions in the back of the throat or the trauma itself will be sufficient to cause laryngospasm which may endanger the patient's life. This can be avoided by an adequate topical anesthesia and placement of the tube under slight sedation from various drugs such as Demerol®, Phenergan®, or Nisentil® Pentothal may be used to create a state of sedation, but this must actually be sedation and not a state of sleep. Even this moderately deep sedation may be hazardous.

13. The technique should be of a type so that a rapid emergence may occur once the anesthetic and surgical procedure is terminated. In this way, if the patient is fully awake, he will guard

his own airway and will avoid aspiration of vomitus or secretions. The technique should be utilized which will result in little or no vomiting. Since many of these patients will have intramaxillary wiring or similar procedures, postoperative nausea and vomiting may endanger the entire procedure if not the life of the patient. Prophylactic does of antiemetic drugs would be advantageous in these patients and techniques such as nitrous oxide-pentothal, nitrous oxide-demerol techniques probably will result in the lowest incidence of nausea and vomiting.

TECHNIQUE

Premedication should consist of mild sedation and an antiemetic drug as well as a drying agent such as atropine or scopolamine. The timing must be carefully evaluated, especially with the drying agent. There is a tendency to utilize the drying agent at the same time as the sedative. The sedative may wisely be given from an hour and one-half to one hour prior to the expected time of induction of anesthesia, while atropine or scopolamine may be given 30 minutes prior to the expected time of anesthesia. Sedation should not approach the range which would cause sleep in cases in which obstruction of the airway is a potential hazard. On arrival in the operating room, infusion should be started with a large needle, preferably with a crystalloid such as glucose and water. One should check to see that the blood is or will be readily available when needed where bleeding is a potentiality or has occurred at the time of accident. No case should be started if the patient still shows evidence of shock unless bleeding is a problem at that time. In patients in shock, bleeding may be controlled at the same time that blood or intravenous fluid is given.

If tracheotomy has already been performed, the patient may be induced with an intravenous basal anesthetic and the tracheotomy tube is connected to an anesthetic machine. Through the tracheotomy tube, nitrous oxide is administered in concentrations adequate to maintain a satisfactory plane of anesthesia. If tracheotomy is not present, the adequacy of the airway must be investigated. No patient may be put to sleep when there is actual danger of failure of the airway once the patient is asleep. If there are secretions in the back of the throat or in the chest, these patients also should not be put to sleep until the airway is guarded by the presence of an endotracheal tube.

A careful technique of topical anesthesia, usually 1% Pontocaine® may be used to anesthetize the lips, gums, tongue, posterior pharynx, and larynx. If the intubation is to be by a nasal route, the nose also is carefully sprayed with a topical anesthetic. The common error in the use of the topical anesthetics is that dosage is not carefully scrutinized and an adequate time is not permitted for the administration of topical anesthesia. One should use a clock and spread the time for the administration of the topical anesthesia into regular intervals for each section of the procedure. A minute and one-half to two minutes after the lips are done, the gums and tongue are anesthetized. Two minutes later, the posterior pharyngeal wall; and three or four minutes later, the larynx. Careful attention should be paid to the amount of agent administered as these drugs are potentially toxic. However, their toxicity may be markedly diminished by utilization of divided small doses at any particular time. Hurrying markedly increases the toxicity of the local anesthetic agents.

Once the topical anesthesia has been administered and a period of approximately three minutes has passed since the last spraying, then the endotracheal tube, with a cuff that has been previously checked, is selected for the case. This tube may then be passed either by the nasal or the oral route. In general, the nasal route in most maxillofacial cases is either mandatory or preferable. In some instances, however, due to deviation or to the trauma of the nose itself, the oral route is necessary. This would depend upon the individual case. Care must be taken in passing the tube through the nose, that bleeding is not started. A thin-walled, well lubricated tube should be used and if the mucosa is boggy, vasoconstrictor drugs may be combined with a topical anesthetic. By careful manipulation, most anesthesiologists can pass the tube into the larynx without the aid of a laryngoscope. It may be necessary to do a nasal intubation utilizing the laryngoscope for guidance and proper placement of the tube. Once the tube is in place, an intravenous anesthetic utilizing such drugs as Demerol®, Surital®, or Pentothal® may be quickly administered through the intravenous tube at a dose adequate to put the patient into a light

sleep state. Where coughing is objectionable, a topical of the larynx may be added to the topical of the upper passages, reinforced by a transtracheal route. One utilizes a 1½ inch 23 gauge needle, passes it through the subcutaneous tissue and crico-thyroid membrane, and instills through this needle approximately ½ to 1 cc. of 1% Pontocaine (tetracaine).

After the patient has been intubated, small divided doses of a basal anesthetic are added quickly to induce the sleep state. The dose is gradually increased until a light plane of anesthesia exists. During this time, the tube is connected to an anesthetic machine having anesthetic concentrations of nitrous oxide (70-80%).

This phase of the problem is confusing to many. There seems to be an extreme hesitancy about using nitrous oxide either adequately and/or correctly. Nitrous oxide should be used in a concentration that will be tolerated adequately by the patient. In no instance should oxygen be reduced below 20%. If the basal anesthetic has reduced respiration, the concentration of nitrous oxide may be reduced from 80% to 75 or 70% and respiration supplemented. However, the more nitrous oxide is diluted, the greater the need for larger and larger doses of the various anesthetics. It must be pointed out that nitrous oxide is a noninjurious agent; it is not toxic to any organ of the body. However, when combined with inadequate oxygen, trouble may occur. Adequacy of ventilation must be assured at all times. It is important not only that the concentration of oxygen and the gases administered be adequate, but that the exchange across the pulmonary barrier be adequate. An attempt should always be made to maintain a nitrous oxide anesthetic with a supplement of some of the basal anesthetic agents rather than create a sleep state from the basal anesthetic and supplement it with nitrous oxide. This is because nitrous oxide is a more easily and quickly removed, a less toxic, and a more easily controlled agent.

The Demerol technique is increasing in popularity and much can be said in its favor. The patient is less likely to buck on the tube and there is less difficulty at the time of removal of the tube. However, a great deal may be said in favor of Pentothal. Probably the best technique would be a combination of these techniques—that is, topical anesthesia to place the tube, Pentothal to create the initial surgical plane of anesthesia, supplemented with nitrous oxide, and carried on with divided doses of Demerol.

Curare or curare-like drugs rarely are needed. However, where marked relaxation of the jaw is desired, these drugs may be given to create marked relaxation. However, they must be used carefully in small divided doses so that respiratory depression does not occur. Probably the ideal drugs for this technique are those like Succinylcholine wherein the degree of relaxation can be fluctuated from moment to moment. Where relaxation is not necessary, curare drugs add nothing to the procedure, if an adequate plane of anesthesia is maintained at all times.

Care must be taken that the cuffed tube is inflated so that bleeding does not occur beyond the cuff into the trachea. It might be advisable also, in positioning the patient, to so place the head and body that blood will tend to gravitate away from the larynx toward the nasopharyngeal area.

If nitrous oxide anesthesia with supplement of some form is utilized the patient can be maintained in an extremely light plane of anesthesia yet adequate for all surgery at hand. The anesthetist must assure himself at all times that the exchange, the color of the blood, the pulse, blood pressure, are adequate. These patients must be watched, as all patients should be, and the drugs administered from moment-to-moment depend upon the observation of the patient. Regardless of the technique selected beforehand, it must not be adhered to if for example, even with a 50-50 nitrous-oxygen mixture the blood is dark. Oxygen should be increased and a diligent search made for the cause of the cyanosis.

As much as possible, the narcotic drugs, and in this we include Pentothal, Surital, and other drugs, should be kept at an absolute minimum. The advantage of drugs such as Nisentil and Demerol, when used as a supplement, is that they may be counteracted by the drug n-allylnormorphine [Nalline®] at the end of the procedure. It must be remembered that the greater the dosage of Pentothal, the longer the patient is likely to sleep in the postoperative course. Once the procedure is ended, the patient should have a careful aspiration of his endotracheal tube

and especially the area of the mouth and nose. Ideally, the tube should be left in place until such time as the patient has full control of his airway. He should be permitted to awake in the operating room where all the techniques and instruments necessary for emergency procedures may be carried out; where this is not possible, certainly in the recovery room. If not in the recovery room, an intern or resident capable of dealing with emergency must remain with the patient until he can respond to commands. In other words, be sure the patient has control of his airway before he is left to the routine care of a surgical floor. If intramaxillary wiring or similar procedures have been utilized, scissors or wire cutters must be on hand as well as a tracheotomy, bronchoscopy, and suction mouth prop or screw. The patient should be placed in bed on his side with the head dependent so that the dangers of vomiting may be minimized. It may be preferable to place a Levine or similar gastrointestinal suction tube into the stomach while the patient is still anesthetized and have suction proceed during the operative procedure. Or the patient may be brought to the operating room with the gastrointestinal tube already functioning. It is preferable to do a prophylactic tracheotomy under elective rather than under emergency conditions, so that if edema exists and respiratory obstruction is feared, a prophylactic tracheotomy should be done. However, this also may be overdone.

In the postoperative period, many of these patients — although they react at the time that the procedure is completed and even respond to the spoken voice — may frequently go back to sleep and become obstructed. They must have continuous adequate nursing care that usually can be given only in a recovery room type of nursing care. The narcotics used in the immediate postoperative period should be absolute minimal and if possible, avoided entirely. Most patients can be adequately cared for by the use of small doses of Demerol of approximately 25 mg. However, the drug should not be given unless it is certain it will not depress to the degree that the patient may have respiratory difficulty. The tendency is to use too large doses of narcotics in the immediate postoperative period.

In the postoperative period one should also keep in mind the importance of the stir-up regimen — that is, deep breathing, the importance of the cough and of minimizing the doses of narcotics. Oral hygiene must be maintained. Aerosol therapy frequently is neglected. The use of oxygen frequently is haphazard. Adequate tracheotomy adapters should be on hand. Equipment for the administration of aerosol and oxygen and for resuscitation also should be on hand until such time as the patient can maintain his own airway and respiration.

SUMMARY

The problem of maxillofacial surgery is that of adequate maintenance of a sterile field, of a clear field for the surgeon, one under which he can work in an unhurried, uncluttered manner. The induction of anesthesia should ideally be accomplished under topical anesthesia after the patient has been carefully evaluated and declared to be prepared for surgery. Then the ideal anesthetic would be one which would be light enough to create a quiet patient, being assured that the patient is adequately oxygenated at all times and not depressed, that his overall physiology from moment to moment is observed, and that the patient is in a light plane of anesthesia that will respond quickly and quietly once the surgical technique is terminated. Once the surgical technique is terminated, the hazards again occur when the endotracheal tube is removed. The tube should be removed in the operating room and the patient watched until he responds to the spoken voice. Where this is not possible, he may be removed to a recovery room or its substitute for continuous observation until he is no longer in danger from aspiration or from obstruction of the airway.

Tranquilization and Sedation by the Use of a Combination of Small Doses of Reserpine and Pentobarbital Sodium

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STUDIES have shown definitely that there is a potentiating action between reserpine and the barbiturates (1). This has been shown to be a true potentiation and not a disturbance of either detoxification, excretion, or absorption. While previous work had all been done on laboratory animals[1] the present study was an extension of this concept to human beings. There is no doubt that the barbiturates are effective in the sedation of anxiety states. It had been similarly shown that reserpine has a variety of pharmacologic actions, one of which is a tranquilizing effect and sometimes has marked action in anxiety states[5,11] as well as antihypertensive activities. It was of great interest to us to study the use of reserpine and pentobarbital sodium (Nembutal) in combination* in an effort to discern what effect the two drugs together would have in anxiety states and in hypertensive states.

The newer concepts concerning hypertension [2,3,4] and the methods of evaluating antihypertensive drugs made it necessary to carry out a study in which both drugs would be used, as well as a placebo.

METHOD

Twenty patients suffering from mild anxiety states were used in this study. No attempt was made to classify these patients psychiatrically as to the exact type of anxieties, but in general these anxieties were expressed as insomnia, vague conversion manifestations such as belching, epigastric distress, esophageal distress, abdominal distress, and nervousness. In none of these patients were there any observable organic lesions. A few patients were included in this study who had well-defined essential hypertension; these will be discussed separately. During the study no other medication was used on any of these patients and they were told nothing about the nature of the medicines which they were to receive except that they were to use one capsule of Nembutal, 30 mg., and one tablet of reserpine, 1/4 mg., each evening before retiring.

Our main interest was to observe what effect the drug had in producing sedation. That we judged from the re-establishment of normal sleep and normal sleep patterns. That is, we were interested in noting whether or not these patients who complained of various minor disturbances could be readjusted by the simple medication to a normal sleep pattern and relief of symptoms.

RESULTS

In 15 of the 20 cases used it was found that the effect of the combination had a more rapid onset than normally is expected of reserpine, and a more lasting one than is normally found with 30 mg. of Nembutal. These 15 patients all stated that they had a delightful sense of normal sleep beginning the first night and that their degree of relief from anxiety, tension, and insomnia increased during the next four to five days, after which there was no noticeable increase in the effect. For example, patients who awakened three to five times during the night and had extreme difficulty in going back to sleep were now found to sleep, with only one or two awakenings, and as time passed at the end of the week were sleeping through the night without any difficulty whatsoever. On the other hand, patients who had complained that they were unable to sleep more than three to five hours during the night found that their sleeping ability was increased in a day or two to eight to ten hours. There were no complaints at all of any patients that they had increased drowsiness during the day.

From the Medical Associates of Chicago

*Now available on the market as Nembu-Serpin ®.

The other five patients had various types of response, all of which were in the direction of relief of symptoms. Three of the patients received only partial relief. These patients, however, did report more comfortable existence and alleviation of their anxieties. One patient had increased intestinal contractions and cramps in the abdomen and medication had to be stopped. It was determined, by eliminating first reserpine, that it was the reserpine to which the patient was responding in this untoward manner.

It was found that when a placebo was used in place of the reserpine that the patients received a partial response. For example, six of the patients placed on the Nembutal-reserpine management were placed on placebos. This consisted of a tablet that was identical in appearance with reserpine, but the patients were given the usual dose of Nembutal. It was found that if these patients had already responded to the Nembutal-reserpine combination, they did not realize that the drug had been changed and the symptoms remained unchanged. In one case the patient came in and stated that he no longer was getting the beneficial quieting effect which he had received from the Nembutal and reserpine.

On the other hand, patients started on the Nembutal and placebo had a much less marked effect than those receiving nembutal and reserpine. Eight patients placed on Nembutal and the placebo found that they received only a short period of sedation in the evenings after taking the Nembutal-placebo combination. In no case did these patients receive the prolonged tranquilizing effect which was present with the Nembutal and reserpine. However, when these patients were allowed to remain on the Nembutal-placebo combination for a period of five days to one week they began to develop some increased sedative effect. This took the form of a more prolonged, more normal, and a more pleasant type of sleep.

Eighteen hypertensives were placed on this management to see what effect it would have. It was found that the hypertension, if it were severe—that is, either long-standing or unusually high, showed little response to this type of management that would not be expected from normal regulation of habits and mild sedation. However, in those patients that had a status such as is normally spoken of as vasomotor instability—that is, mild hypertension of 160/108-110 and on rest and relaxation would fall to 130-140/90-100, the effect was much more marked. These patients' pressures would fall rapidly to normotensive levels and would remain throughout the 24 hours. Furthermore, they were much less responsive to their environment, found a great deal of joy in their activity and in their work, and had no effects of drowsiness.

In ten severe hypertensives with blood pressures averaging 220/120, we found that the Nembutal-reserpine combination given four times a day had a marked effect in relieving these blood pressures. The blood pressures fell in the course of 24 to 36 hours to the levels of 170/108 and thereafter declined gradually over a period of the next 8 to 10 days to 160/100.

INTERPRETATIONS

The effect of Nembutal and reserpine in combination using 30 mg. of Nembutal and ¼ mg. of reserpine definitely has potentiation effect. This effect was primarily in the speed of onset of the sedative and tranquilizing effects of the two drugs used together. The side effects which were observed were very small and very infrequent. Drowsiness was avoided in each case.

There is little doubt that this combination of drugs will find great benefit in the treatment of the simple anxiety states and in many less complicated neuroses. We use the term less complicated here to mean those of such miscellaneous things as impotence in men, constipation in both men and women, frigidity in women, the elimination of extra cardiac systoles, and tremors.

The use of this combination of drugs in hypertension both of moderate and severe types promises success. It would seem from our studies here that the use of this drug combination in adequate quantities, adequate dosages, and for proper duration of time is extremely beneficial. Recently, it has been noted by some investigators that reserpine alone oftentimes did not produce the desired degree of sedation. There are many hypertensives who we do not want to be alert and over responsive. On the other hand we did not see in any case where 30 mg. of Nembutal-placebo combination for a period of five somnolence. One of the most difficult problems

of hypertensive patients ususally is to keep them quiet and to keep them in an attitude of calmness. Using the combination of Nembutal and reserpine it was possible to get these patients to take a nap in the middle of the day and go to bed early in the evening. All of them reported that they had calm and continuous and quiet sleep during the night. In the patients studied here, symptoms such as headache and vertigo completely disappeared.

SUMMARY AND RECOMMENDATIONS

It is obvious from this report the Nembutal and reserpine in combination bid fair to be quite effective in producing early, smooth, relaxing sedation and tranquility. This effect apparently extends from pure psychiatric problems of anxiety and conversion of the disturbances to the simpler though more difficult problems of hypertension. Further, there is evidence that simple manifestations of more severe anxieties as enumerated above are amenable to the treatment with this combination of drugs.

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I've stopped smoking!

I have stopped smoking cigarettes. How smug I am. Nobody dislikes me more than me. There are no compensations. My singing voice has improved but then I could not sing a note in key before, so that the only effect of this is that my bathroom voice penetrates more piercingly into the privacy of my musically minded family. My breathing also is freer. Great lumps of lovely fresh air sweep down into the alveoli that have been smoke filled for years. So, also, do large dollops of the metropolitan atmospheric cocktail of diesel oil and smog. My squash rackets has improved of course but I am too old to be still playing the game and the extra effort that I can now put into it must be taxing my coronaries to the limit, and no doubt very shortly to beyond the limit of their endurance. Appreciation of good food and wine is a long forgotten and now renewed delight, particularly to my tailor who has done all that safety and decency permits in the way of letting out and now, with undisguised enthusiasm, is embarking on a new sartorial building program. Actually, this stopping of cigarettes has not been too bad. I have taken the edge off the misery by an occasional cigar. Being inexperienced, I am not always inspired in my selection and if, during one of the inevitable attacks of vertigo which accompany an unfortunate choice I should fall under a bus, I do hope I live long enough to laugh at the clever way in which I have avoided a lung tumor.*In England Now. Lancet, July* 14, 1956.

Laboratory Aspects of the Diagnosis and Treatment of Fetal Erythroblastosis*

KURT STERN, M.D., CHICAGO

IMMUNOHEMATOLOGIC tests are essential for diagnosis, prognosis, and therapy of fetal erythroblastosis. Prenatal testing should include:

1. Rh_o (D)-typing of expectant mothers.
2. Rh_o (D)-typing of husbands of Rh_o (D)-negative pregnant women.
3. Antibody screening, early in pregnancy, of Rh_o (D)-negative women with Rh_o (D)-positive husbands.

Consideration should be given to the D^u factor in this testing. In the absence of Rh antibodies, the screening should be repeated at 5 and 8 months of gestation. Positive screening tests should be followed by determination of the Rh antibody titer, which is to be repeated at least monthly in the last trimester. Attempts also should be made to determine the zygosity of husbands of women with Rh antibodies. Prognosis for infants of mothers with antibodies is influenced by time of appearance of antibodies; presence of agglutinating or conglutinating antibodies; height of antibody titers; changes in antibody titer; and zygosity for the Rh factor of the father. Definitive diagnosis of fetal erythroblastosis is made on the newborn by means of the following tests: Rh type, Coombs test, RBC, hemoglobin, and serum bilirubin. Latent and manifest disease must be considered and differentiated.

Blood selected for treatment of erythroblastotic infants must be Rh-negative, of an ABO group compatible with infant and mother, and as fresh as possible. Tests helpful for evaluation of efficacy of therapy and of the course of the disease include repeat determinations of Coombs test, hemoglobin, and RBC; nucleated red cell count and reticulocytes; and serum bilirubin. The high correlation between degree of hyperbilirubinemia and propensity to development of nuclear jaundice must be kept in mind. While 95 per cent of cases of fetal erythroblastosis are caused by sensitization of the mother to the Rh_o (D) factor, much more rarely other blood factors may be responsible for isosensitization, e.g., A, B, hr'(c), or Kell. The basic steps for establishing diagnosis of such incompatibilities and resulting immunization were discussed. Methods were outlined for proper selection of blood suitable for transfusion to such infants analogous to erythroblastosis caused by anti-Rh_o (D) antibodies. Also in all other instances the blood used for transfusion of the infant must be free of the antigen which had caused sensitization of the mother.

Read before the Illinois Association of Blood Banks, 113th Annual Meeting, Illinois State Medical Society, Chicago, May 19, 1953.

**Abstract of original article.*

CASE REPORTS

Fatal Agranulocytosis Due to Chlorpromazine

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AGRANULOCYTOSIS remains the most dreaded complication in conjunction with chlorpromazine treatment.

A report to the Council of Pharmacy and Chemistry of the American Medical Association, entitled, "Blood Dyscrasias Associated with Chlorpromazine Therapy,"[1] indicates that by July, 1954, nine cases of blood dyscrasia associated with chlorpromazine had been known. As of January 28, 1956, the date on which the report was published, 45 such cases had been known in the American and British literature.

It had likewise been estimated that approximately four-million people in the United States had been exposed to chlorpromazine. It is roughly implied that possibly one case out of 50,000 to 100,000 patients receiving the drug may develop a dyscrasia.

Seventeen patients who developed agranulocytosis died, but in cases recognized early, recovery generally followed cessation of chlorpromazine administration.

Meanwhile one other case has been described by Carey[2] concerning a 51 year old male who developed agranulocytosis seven days after chlorpromazine had been stopped, going along with a white blood cell count of 350, with no neutrophils present. This patient had been taking 75 to 100 mg. of chlorpromazine daily for approximately two weeks, beginning one month before admission. During admission it had been gradually increased to 400 mg. daily. The patient responded well to antibiotics and after five days neutrophils appeared in the blood. Likewise Barsa and Kline[3] described two cases of agranulocytosis while receiving combined reserpine-chlorpromazine therapy. The two authors postulate that the agranulocytosis in their two cases was due to the chlorpromazine component of the chlorpromazine-reserpine combination. Each concerned a 40 year old white female, and both survived. This brings the total of blood dyscrasias seen in conjunction with chlorpromazine therapy to 48.

The following is an addition of another fatality to the 17 cases so far reported and to the 48 cases known of having developed blood dyscrasias coincident with chlorpromazine. It occurred in one patient out of a total of 1,508 treated (Elgin State Hospital) at this writing.

The patient, A. L., was a 62 year old white female, admitted on August 23, 1946. She had not left the hospital since admission. Prior to

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Read at the 116th Annual Meeting of the Illinois State Medical Society in Chicago, Illinois, May 16, 1956.

admission she expressed rather typical paranoid fears and had shown panic states at home, when she would run into the street through traffic. She remained single, and just before her mother died, in 1934 (patient was then 40 years old), she, the mother, revealed to an older brother of the patient that the patient used to masturbate excessively as a young woman. For many years the patient had been supported by the family, and always had been withdrawn. Prior to admission she had become untidy in appearance.

After the father's death, which occurred in 1945, the patient failed rapidly. It was then when her panic states began to appear. She had been living ever since the death of the father with an unmarried brother, who was 59 years of age at the time of her admission. Shouting at the top of her voice, tearing of clothes and pulling her hair were the symptoms precipitating her commitment.

On arrival the patient was well oriented in all three spheres, but showed definite evidence of delusional thinking. A thorough mental examination, performed several weeks after admission, revealed that this patient had been showing evidence of a mild psychosis for many years. She had stopped working at the age of 32, and admitted a "nervous breakdown" at the age of 24. It was obvious that she had been over-devoted to her parents and had no outside interests. Disorganization of thinking was evident, especially in discussing her personal problems. She expressed the delusion that she was married to a man whose name she did not know. A diagnosis of chronic dementia precox, undetermined type, was made. The prognosis was considered poor.

At the beginning of her hospitalization we succeeded in industrializing the patient in the mending room. She was then residing on an industrial ward for elderly women. Signs of occasional irritability, of rage, and the use of vulgar and profane language were observed over the years. Other delusions regarding her food being poisoned likewise became apparent during her course in the hospital. At times she would refuse to eat. Nevertheless, she was satisfied, as the years went by, with a work assignment in the kitchen of one of the infirmaries.

On November 28, 1955, she became extremely noisy and agitated, disturbed other patients, and for this reason was placed on chloropromazine. 100 mg. twice a day. By December 30, 1955, she was reported as quiet and co-operative, performing her work assignment to everybody's satisfaction, and no longer disturbing other patients.

On January 10, 1956, the patient developed a temperature of 103°, giving a history of upper respiratory distress for one week. While initially it was our impression that she was suffering from a virus infection, a blood count performed immediately revealed 3,500,000 erythrocytes, 700 leucocytes, showing a relationship of 94% lymphocytes to 6% granulocytes, and a hemoglobin level of 10.9 mg. Patient was immediately transferred to the hospital, where a careful physical examination did not reveal any necrotizing ulcerations in any of the body openings or on the skin. There were no enlarged lymph nodes. There was a very mild tonsillitis and pharyngitis, showing minimal inflammatory changes. Physical examination was otherwise negative. Her pulse was 88 and respiration was 20. Blood pressure was 130/84.

Chloropromazine was immediately discontinued and she was placed on antibiotics (penicillin, 600,000 units b.i.d., aureomycin, 250 mg. q.i.d., streptomycin, 1 gram, intramuscularly, daily). Other supportive measures were: liver extract, 1 cc i.m., every other day; vitamin B complex, 1 tablet t.i.d. Another blood count taken during the same day revealed 1000 leucocytes with 97% lymphocytes and 3% granulocytes, 3,000,000 erythrocytes and a hemoglobin level of 10.5 mg.

On January 12, 1956, she received 500 cc. of whole blood without ill effects. Her blood pressure at that time was 136/84, and her complete blood count after the transfusion showed the following picture: 1,100 leucocytes with 98% lymphocytes and 2% granulocytes, 3,700,000 erythrocytes and 13.2 mg. of hemoglobin. The following day, January 13th, her leucocyte count was 1600 with 95% lymphocytes and 5% granulocytes.

On January 14, 1956, the patient received another transfusion, consisting of 250 cc. of whole blood. After this her white count was 1500, with 97% lymphocytes and 3% granulocytes. Her R.B.C. was 4,150,000, and hemoglobin 13.5 mg.

Her temperature was 102.2° at 6 a.m. January 14th. While she appeared generally improved

that day, during the early morning hours of the 15th of January, she went into acute cardiac failure, with a heart rate of 140, going along with cyanosis and dyspnea, and a respiratory rate of 34; a few coarse rales were audible over both lungs, and she gave the impression of having beginning pulmonary edema. The patient was immediately digitalized, receiving two ampulse of Digalen®, which was to be repeated every two hours. However, at 6:35 of the same morning she expired. No cortisone had been given.

A case of a 62 year old white female developing fatal agranulocytosis concomitant with chlorpromazine therapy is described. The case is interesting from several aspects. The absence of any necrotizing ulcerations, the absence of any regional enlargement of lymph nodes, of tachycardia, and the presence of only very slight inflammatory changes on tonsils and pharynx label this case as rather atypical.

It has by now become extremely doubtful whether patients suffering from agranulocytosis should receive blood transfusions. In our particular case the possibility exists that acute heart failure might have been the result of the transfusions this patient had received.

Regarding prevention, it is felt that complete blood counts, performed at regular intervals are of little value. Hoch[4] feels there is no dependable laboratory procedure for agranulocytosis which can be given sporadically and the performance of daily blood counts on every patient on chlorpromazine, for practical purposes, is impossible. He, therefore, feels that better methods are necessary to improve the particular compounds causing agranulocytosis, including chlorpromazine. Meanwhile, only most intensive vigilance may avoid this complication. This is most difficult in atypical cases such as this.

SUMMARY

1. One case out of 1,508 patients treated with chlorpromazine at Elgin State Hospital developed fatal agranulocytosis. This is the only dyscrasia, as well as fatality seen in connection with chlorpromazine at Elgin State Hospital.

2. The patient had not shown any typical necrotizing ulceration during her course of illness.

3. Blood transfusions in cases of agranulocytosis seem contraindicated, since they might cause cardiac failure. The emphasis of the treatment should be on the antibiotic regimen and possibly cortisone.

4. The case brings the total of blood dyscrasias described in connection with chlorpromazine in the English and American Literature to 49, and the fatalities encountered to 18.

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Decline in stomach cancer

In both sexes there has been a sizable reduction in mortality from cancer of the digestive tract, especially of the stomach. The reasons for this favorable trend are obscure. While some progress has been made in the surgical treatment of stomach cancer, this probably is not a major factor, because only a relatively small proportion of the cases are caught early enough for treatment to be sucessful. It appears more likely that the recorded decline in mortality represents, in part, the generally increased accuracy in diagnosis and reporting, with fewer deaths being attributed to cancer of the stomach; in part, the decline may reflect a real decrease in the frequency of stomach cancer. *Cancer in Midlife. Statis. Bull. Met. Life. June* 1956.

Carcinoma of a Duplicated Gall Bladder

S. W. Raymond, M.D., F.A.C.S., Chicago and Chester B. Thrift, M.D., Oak Park

A DUPLICATE gall bladder is rare. More unusual is to have carcinoma in one gall bladder and not in the other. Such a condition has not been recorded in recent literature. Additional complications in this patient were herpes zoster and severe collapse, probably due to having received cortisone about four months previous to surgery.

F.H., a white spinster, 53 years old, was admitted to West Suburban Hospital May 28, 1955, with painless jaundice and pruritus. She stated her stools had varied in color from clay to dark and her urine had been dark amber. There was malaise but no other complaints. She had been treated for anemia and low blood pressure for six months but denied parenteral treatment of any kind. Two weeks prior to the jaundice, diarrhea had existed for several days. She had been exposed to viral hepatitis one week before she became ill.

She was a well developed white female, not appearing acutely ill but showing jaundice. Temperature, pulse, and respiration were normal. Admission laboratory work showed bile in the urine and negative urobilinogen; this finding later became positive. The specific gravity was 1.005. The stools were reported as brown by both laboratory and nurses; they contained four plus occult blood. Blood findings were normal except for 77% segmented neutrophils. Her Van den Bergh showed a delayed positive direct and a positive indirect. Alkaline phosphatase was 24.9, and phosphorus 5.1. On June 2, 1955 the icterus index was 68. June 6, it was 92, and on June 9, it was 109. June 11, 1955 the alkaline phosphatase was 30, bilirubin 13. mg., thymol turbidity 6.8 and phosphorus 5.4 On June 13, 1955 cephalin flocculation was one plus, Van den Bergh was negative for direct and positive for indirect, her icterus index had dropped to 46, prothrombin time was 115% of normal. June 17, 1955 the icterus index had dropped to 29. The liver was palpable four fingers breadth below the right costal margin; it was soft and not tender.

She had a history of left pulmonary pathology. X-rays showed an old calcified tuberculosis at the apex, with pleural effusion and pulmonary fibrosis. Scout films of the abdomen were normal.

Treatment on admission consisted of Vitamin B and a high protein diet with small amounts of saline cathartics and bile salts. June 9, 1955 cortisone was started at the rate of 100.0 mg. per day for three days, dropping to 75.0 mg. per day for two days. Her course showed a progressive rise of clinical jaundice until cortisone was started at which time there was a rapid drop. She was discharged from the hospital June 17, 1955, after 20 days of hospitalization.

Five days after discharge from the hospital, jaundice again appeared. Cortisone was resumed at the rate of 100.0 mg. per day for five days. She complained of backache and the right kidney could be palpated but was not tender. June 30, 1955, a lesion appeared in the region of the backache. It was radicular in distribution and showed the typical blebs of herpes zoster. She stated that the bowel movements varied in color from clay to normal. Visible jaundice had subsided.

She was next seen October 4, 1955, again showing painless jaundice. A diagnosis of "silent" common duct stone was made and operation was advised. At this time she had taken Meticorten® in doses of 10.0 mg. three times a day for three days. After some procrastination, the patient consented to surgery.

OPERATION

November 1, 1955, under general anesthesia, the abdomen was opened through a subcostal, right sided incision. The liver extended a hand's breadth below the margin; the common hepatic duct was approximately the size of a garden hose

Medical and surgical services, West Suburban Hospital, Oak Park.

(2.5 cm.); a mass the size of a distended gall bladder lay between the gall bladder and the liver; the right and left hepatic ducts were greatly dilated. The mass was covered by an "empty" gall bladder with its margins attached by peritoneum to the liver around the "tumor." The common duct below the cystic ducts was normal. The flattened gall bladder, which contained black tar-like bile, was removed from the surface of the "tumor" and amputated through the cystic duct. The "tumor" was next dissected free from the liver down to a point where it likewise had a duct-like attachment to the other hepatic and cystic ducts; there it was removed. The common hepatic duct was next opened and a large T tube, with one limb directed upward and the other downward, was inserted. The dilatation above the point of the cystic duct was due entirely to the extrinsic pressure of the firm mass which later proved to be a gall bladder. The opening into the duct was closed around the tube with interrupted silk. A Penrose drain was brought out through the outer angle of the wound.

The pathologist later identified both removed tissues as containing the structures of gall bladder with chronic cholecystitis in the distal organ and papillary adenocarcinoma in the proximal organ.

Because five months had elapsed since receiving large doses of cortisone and because only a few small doses of Meticorten® had been used during the interval, it was believed it would not be necessary to use these substances either pre- or postoperatively. She left the operating room in good condition and remained so until that evening.

At about 5:00 p.m., considerable bleeding from the wound took place, estimated at about 300 cc. In addition to the 500 cc. of blood she had received in the operating room, another 500 cc. was given. At 3:00 a.m. the dressing again became saturated and her blood pressure dropped to 50 and the pulse was practically imperceptible. Examining the wound, blood-free bile was found to be flowing from around the Penrose drain and through the T tube; blood was oozing from between two of the sutures about midway between the drains. Several sutures were removed and a small skin bleeder was located and ligated. Later, the skin was closed at this point with clips. Fluids were started and cortisone was given by hypodermic.

The patient did not present the typical picture of hemorrhagic shock. The skin was warm, there was no air hunger, she was fully conscious; her only complaint was a feeling of extreme weakness. Her condition gradually improved and 48 hours later her blood pressure stabilized at 110/70. Antibiotics were given to combat sore throat possibly due to the Levine tube or intratracheal anesthesia. Cortisone, interspersed with ACTH, was continued in gradually reduced doses.

DISCUSSION

Walter S. Snell in *"Disease of the Gall Bladder"* records instances of double and septate gall bladders. Ewing states that 5% of all carcinomata occur in the gall bladder, with women outnumbering men four or five to one, at an average age of 58. Stones are reported to be present in from 70% to 100% of cases in different series; no stones were found in this patient. There is usually a papillomatous outgrowth which may be villous or papillomatous. Gelatinous and diffuse types occur; usually there is extension and metasteses at the time of operation and jaundice usually is a permanent finding. This patient had intermittent jaundice; the carcinoma was entirely confined to one of the gall bladders, and no metasteses could be found. Cholangiograms to believe that a five year arrest can be expected.

COOK COUNTY HOSPITAL CASE RECORDS

Retroperitoneal Rupture of the Duodenum

J. B. Dibble, M.D.*, and Eli T. Samet, M.D., Chicago**

THE diagnosis of rupture of the second and third portions of the duodenum must be made by inclusion of that diagnosis in the differential diagnosis when an injured person presents symptoms and signs of an acute abdomen, especially when blunt trauma is involved.

Below is presented a case report of a patient who was involved in an automobile accident, and who presented a number of the characteristic findings of this disease.

U. H., a 30 year old, male negro, was admitted on March 3, 1956, with the history that his car had collided with the rear of another auto about eight hours before admission. He had experienced almost immediate pain in the abdomen, most severe on the right side near the umbilicus. The pain continued as a dull ache in the right side of the abdomen and right flank. He vomited one time. There was no other pertinent history related either to this illness or to other illnesses.

Physical examination disclosed a healthy-looking negro male in some acute distress, moving restlessly in bed. The blood pressure was 110/70, the pulse 90, the respirations 20, and the five minute rectal temperature 99.6 degrees Fahrenheit. Examination of the head, neck and chest was entirely normal. There were no scars, cuts, or bruises. The abdomen revealed tenderness of the entire right upper quadrant, with some tenderness in the epigastrium and right lower quadrant. There was splinting of the right rectus muscle and rebound tenderness in the right upper quadrant. Bowel sounds were very hypoactive, but present. The Murphy punch test was positive in the right costo-vertebral angle. Examination of the extremities was negative. Neurological examination was negative.

The positive laboratory findings consisted of a normal hemoglobin (85%), and a negative urinalysis, with no red blood cells being seen on microscopic examination.

A provisional diagnosis of retroperitoneal rupture of the duodenum or retroperitoneal hemorrhage was made, and the patient was prepared for emergency surgery. Under general anesthesia, the patient was explored through a right paramedian incision. In the area lateral to the duodenum, a retroperitoneal collection of bile stained fluid was found. The hepatic flexure of the colon was freed from the duodenum and the duodenum mobilized by the Kocher maneuver. A one and one-half inch ragged perforation of the distal part of the second portion of the duodenum was found. (Figure 1) Repair was accomplished with a double row of interrupted

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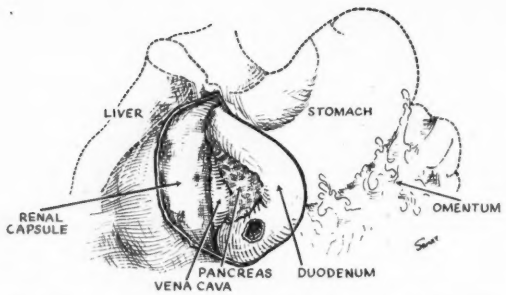

Figure 1. Schematic drawing of rent in duodenum found at surgery.

four-aught black silk and a free omental graft tied in over the site. Examination of other abdominal organs was negative for pathology. A Chaffin tube and Penrose drain were placed to Morrison's pouch and the retroperitoneal area, respectively, and brought out through separate stab wounds in the right flank.

The postoperative course was entirely uneventful. The patient was allowed out of bed in a chair on the first postoperative day. The Levin tube with constant gastric suction was discontinued on the third postoperative day, at which time the bowel sounds were normal, flatus was being passed, the abdomen was flat, and the patient felt hungry. A liquid diet was begun on the fourth postoperative day, and gradually increased until by the end of a week the patient was eating a full tray. The drain was removed on the fourth postoperative day and the Chaffin tube on the seventh postoperative day. The postoperative blood amylase was eight units. Sutures were removed on the tenth postoperative day, and the patient discharged entirely asymptomatic on the fifteenth postoperative day.

DISCUSSION

Importance has been attached by some authors[1,2,3] to the X-ray findings in this disease. The presence of air in the retroperitoneal tissues is practically diagnostic, with extension of air into the peri-renal spaces, into the mesenteries of the large and small bowel, into the mediastinum along the great vessels, and along the psoas muscle to the brim of the pelvis. These findings are undoubtedly of great help in the difficult case which presents with findings other than those of a frank peritonitis. However, if clinical diagnosis of retroperitoneal rupture is made and signs of peritonitis are present, it would seem best to submit the patient to surgery as soon as possible to eliminate the bowel contents and digestive ferments from doing further damage. Even if the exact location of the rupture is in doubt, a long right paramedian exploratory incision can give ample exposure to all quadrants of the abdomen. The picture may be deceptive at the operating table and one must gain a good view of all organs. In this instance, had the duodenum not been completely mobilized, the retroperitoneal tear might have been missed.

In the case, early diagnosis and prompt treatment contributed much to the uneventful postoperative course without complications. A careful closure of the perforation in the duodenum with adequate drainage of the retroperitoneal area is important. These points have been stressed by others.[3] In our case, the differential diagnosis seemed to be limited to retroperitoneal rupture of the duodenum or a retro-peritoneal hematoma. It was our opinion that the evidence of peritonitis, the nature of the tenderness, rebound tenderness, and muscle spasm made it imperative to explore this patient to rule out injuries to the abdominal viscera.

SUMMARY

A case of retroperitoneal rupture of the duodenum successfully treated is presented.

The indications for surgery are outlined.

The X-ray findings are listed, to be used in the problem case.

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EDITORIALS

Chicago physician is GP of the year

Dr. Robert R. Mustell, 63, a family physician whose main practice is in the blighted areas adjacent to Chicago's Loop, has been named by the Illinois State Medical Society as the state's outstanding general practitioner of the year.

This is the first time that the society has so designated a physician with a big city practice. The award has been made annually for the past eight years.

In announcing the selection, Dr. F. Lee Stone, Society president, said the society was particularly appreciative of "the countless hours spent outside his regular practice by Dr. Mustell in organizing, developing, promoting and supervising the Doctors Emergency Medical Service of the Chicago Medical Society over the past five years."

"The service has handled about 20,000 emergency cases since its inception in 1951," Dr. Stone said. "In effect, it is a collective family doctor for thousands of city dwellers who, for one reason or another, have no one to call on in critical medical situations. Dr. Mustell and the 250 volunteer physicians who make the service possible are doing a magnificent job."

Dr. Mustell has been practicing medicine for 37 years. Since 1930 he has maintained an office in downtown Chicago at 30 N. Michigan Ave. This is a central location from which he can most easily reach his patients, whose homes fan out through the Bronzeville district on the South Side and the heterogeneous population areas on the near West and near North Sides. He also is available for emergency medical care to patients in the Loop office buildings.

"The families in my neighborhood have changed completely in the past 10 years, but the medical problems are the same," he observes. "The vast population shift I have seen since the 1920s has siphoned out of these areas many good general practitioners who have not been replaced, although the number of residents has increased."

Dr. Mustell estimates that he sees about 4,000 patients a year in his regular practice. Despite the population change in his "neighborhood," one of the families wrote that he had been their doctor for 33 years. The letter continued:

"During this time he has delivered our babies, daughters, granddaughters and grandson. He has treated us medically and surgically, all of us. We consider him a part of the family and we hope he lives forever."

The son of an adventurous English flour-miller, who later became a prosperous fruit-grower, Dr. Mustell was born Sept. 7, 1893 at Cashmere, Washington. He received his pre-medical education at Washington State College and his M.D. degree at the University of Illinois in 1919. During his last year at medical school, he served a voluntary internship at Mercy Hospital and the Chicago Maternity Center. He opened his first office on Chicago's South Side late in 1919.

Dr. Robert R. Mustell

Currently a staff member of the Illinois Central and Chicago hospitals, he has also served on the staffs of Mercy, Columbus and Kenner hospitals. Besides his chairmanship of the local society's emergency service committee, he is a member of its grievance committee and its Council Advisory Committee on Medical Agencies. He also represents the Chicago Medical Society on the Mayor's Committee on Ambulances.

As medical director of the Catholic Youth Organization since 1944, Dr. Mustell initiated a program for C.Y.O. boxers which gives the ringside physician complete control of the fighters and protects the amateurs against permanent injury.

In 1917, during his junior year at medical school, Dr. Mustell married Aileen Gates, an instructor in surgical techniques and the daughter of a manufacturer of commercial chemicals. They have eight children, five sons and three daughters, and 12 grandchildren. Three of the younger Mustells are in show business, one is a building contractor, another an aeronautical designer, the sixth an atomic research specialist preparing for a medical career, the seventh a chemistry student retired from show business, and the youngest is in the Navy.

Since only one of the daughters still lives with them, the Mustells now make their home in an apartment at 1300 N. State Parkway.

The doctor finds city practice as a family physician very much like that of his country counterpart, except for the traffic congestion. He is physician, surgeon, father confessor and family advisor. Of his more than 2,000 operations, a number have been of the emergency "kitchen table" variety. Of the more than 1,000 infants he has brought into the world, many were delivered in the home, and even a few in his car.

One of his more interesting obstetrical experiences was a 2 a.m. delivery of a premature baby several years ago. The only source of heat in the shabby home was a coal-burning kitchen range. He placed the infant in the oven, while he prepared a shoe box with cotton padding in which to transport the child to a hospital. As he describes it, "mother and son made an uneventful recovery."

Two years ago, after 35 years of round-the-clock practice, Dr. Mustell decided to cut down his work load by eliminating night calls. He finds, however, that he still has to scramble out of bed to settle an occasional medico-legal problem connected with the emergency medical service.

Generally, his work day begins at 7 a.m. and ends about 6 p.m. He devotes the first two hours to surgical schedules. He has office hours five days a week from 9 a.m. to 12 noon, and on three of those days additional office hours from 4 to 5:30 p.m. He makes his house calls during the remainder of the time, allowing himself only 15 minutes for a luncheon snack of coffee and rolls or a sandwich.

Even as in the country, Dr. Mustell has telephone communication problems, since many of his patients do not have phones in their homes. To get around this he took on what he describes as "a new look in general practitioners" three years ago. He subscribed to a pocket radio paging service through which he can receive coded messages wherever he goes.

Medical slang

The vocabulary of physicians contains much jargon. Examples along this line are to refer to a patient as a cardiac, a gall bladder, an acute abdomen, or a cesarean. In addition, the medical profession uses as many abbreviations as does the federal government. We have OB, GC, BP, T and A, VD, and IMS; and the nurse knows that an I.V. does not refer to the ivy league. DOA is dead on arrival and GSW means gunshot wound. Some letter groups have two meanings. B.I.D. can mean twice daily or brought in dead. When you cannot make a diagnosis, GOK (God only knows) comes in handy.

But there is more slang attached to our profession than many of us realize. The American Thesaurus of Slang has nine pages on this subject. Did you know that a hospital orderly is a panhandler and, in some institutions, Coxey's army is the name of the troop of medical students, interns, and nurses that accompanies the chief of staff on his rounds?

Physicians are known as blister mechanics, croakers, pill pushers, and other uncomplimentary titles. A woman physician is a hen medic and surgeons are called everything from butchers to sawbones. The abortionist is a lock picker or pin artist and the obstetrician, a fingersmith, stork doctor, or granny doctor.

Patients are given many colorful names varying from nymphos to multips. The hospital is bedpan alley and drugs are dynamite pills, goof balls, or puff; the new tranquilizers have been dubbed the don't give a damn pills. A cadaver (stiff) is stored in the icebox and the dissecting table is the slab or cold meat block. A small hemostat is a mosquito and the lap sheet covers the laparotomy patient. Gutta percha drain tubes are cigarets and pieces of gauze are flats.

There are many pet names for diseases and deformities. We have the bends, cat fever, and soft bone not to mention cauliflower ear, pigeon breast, saber skin, trick knee, frog belly, goggle eyes, poker back, hobnail liver, policeman's heel, and ragpicker's disease. Most of these terms are well known but did you ever hear that to be immunized is to be salted?

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The food from which a man abstains, after he has eaten heartily, is of more benefit to him than that which he has eaten.

—Luigi Cornaro (1464-1566)

Illinois physicians should join the World Medical Association

United States Committee members of the World Medical Association have been asked in each state to accept the chairmanship of a committee for the promotion of memberships in their respective states. It has been proposed to break this down further by developing county committees within the respective county medical societies.

Editors of county society bulletins may procure an article from the U. S. Committee, Inc., specially written for a county society publication. All members of the U. S. Committee receive copies of the World Medical Journal which gives much information on medical progress throughout the world.

The annual membership dues are only $10 and the U. S. Committee surely deserves more than the 5,000 American physicians who now support the Committee's work. Dr. Louis H. Bauer, a past president of the A.M.A., is secretary-treasurer of the U. S. Committee, and its chairman is Dr. Austin Smith, editor of the Journal of the American Medical Association.

Physicians who wish to join, or procure information on the work of the U. S. Committee, and the World Medical Association in general, may write to Dr. Bauer, the World Medical Association, 10 Columbus Circle, New York 19, N. Y.

We sincerely hope that many physicians in Illinois will write for an application for membership, and increase the number of members of the World Medical Association in this state.

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Blue Shield — the "doctors' plan"

All members of the Illinois State Medical Society have recently received one of the Blue Shield plaques which should be displayed in the office. Medical and Surgical Care plans, strictly on a voluntary basis, have grown by leaps and bounds in recent years. This, we believe, has been an important factor in proving that we do not need Federal medical care in this nation.

Blue Shield was initiated by doctors and Medical Societies to help their patients, and its medical policies are determined by medical men.

Hence, Blue Shield is often called the "doctors' plan."

From a public relations standpoint, this has subtle dangers as well as obvious advantages. For while most people will have implicit confidence in a health insurance program approved by the medical profession, there is always the possibility that some may think the "doctors' plan" is designed primarily to benefit the doctor, rather than the patient.

Much depends on the attitude of the individual physician toward his local Plan. If the doctor fails to acknowledge Blue Shield as his own, if he declines to accept the obligations and responsibilities entailed, or if he uses the Blue Shield payment merely as a platform upon which to charge a higher fee, then he should not be surprised if some of his friends conclude that Blue Shield is operated largely for the doctor's benefit.

But if the physician looks upon himself not as the owner but as the trustee of Blue Shield, if he speaks well of the Plan, if he tries to help his patients understand the plan and use it intelligently — then the patient will identify Blue Shield with the idealistic traditions and purposes of medicine.

Blue Shield *is* the "doctors' plan," not in the sense that the doctor owns it, but because he has organized it to help him serve his patients more satisfactorily. It is the "doctors' plan" because the doctor is responsible for it, and because Blue Shield is an impressive proof of the doctors' concern for the welfare of the people.

Blue Shield now serves the vital needs of more than 37 million Americans. Thirty-seven million Americans can't be wrong, and their support of this program represents a tremendous popular vote of confidence in the medical profession. In a sense, Blue Shield is a bond of mutual benefit between the profession and the people.

Your Blue Shield Plan may not be all that you would like it to be, but it is yours — to strengthen and improve. It is the medical profession's best answer — so far — to the challenge confronting the profession, to prove that we can solve our own problems by voluntary cooperation with industry, labor and the public. What Blue Shield may become is largely up to *you!*

Work starts on Psychiatric Institute State Hospital

Builders began work Oct. 30 on the 11-story Psychiatric Institute State Hospital in Chicago's West Side Medical Center.

The T-shaped structure will cost nearly $8 million. Completely air-conditioned, it will provide facilities for care and treatment of 400 mental patients plus the most modern equipment for research and training activities.

The Illinois Department of Public Welfare,

headed by Dr. Otto L. Bettag, will operate the hospital. A professional board comprised of representatives from the various university medical schools and psychiatric institutes and staff members of the state welfare department will serve as advisers concerning the hospital's professional policies.

Approved by the Council of the Illinois State Medical Society, the project has been praised by representatives of the U. S. Department of Health, Education and Welfare, the Illinois Psychiatric Advisory Council, the American Hospital Association, the Board of Public Welfare Commissioners and the Medical Center Commission.

Plans and specifications were prepared by the firms of Shaw, Metz and Dolio and Fugard, Burt, Wilkinson and Orth as associate architects under direction of Louis H. Gerding, state architect. The building is to be completed in about a year and a half.

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Gen. Paul I. Robinson to head "Medicare" programs

It was recently announced by the Department of the Army, that Maj. Gen. Paul I. Robinson has been appointed executive director of the new dependent's civilian medical care program. Gen. Robinson will head a program enacted by Con-

gress on June 7, providing for medical care in civilian facilities to dependents of active duty personnel in the "uniformed services".

Gen. Robinson is a native of Illinois and is known to many members of the Illinois State Medical Society. He was born at Mt. Vernon, and attended schools in that city. A graduate of the Washington University Medical School in St. Louis, he received his regular Army commission in August, 1929, and has remained in service since that time.

Gen. Robinson served in the European Theater in 1944 and in 1945 was deputy chief surgeon, U. S. Army Forces, in the Far East. He also saw duty in Korea as the Eighth Army surgeon. He has commanded three of the Army's largest hospitals — Fitzsimons in Denver, Madigan in Tacoma and Letterman in San Francisco.

Since the Army has been designated the Executive Agent for the "Medicare" program, he will be concerned with the arrangement for medical care from civilian sources for the wives and children of personnel in the Army, Navy, Air Force, Public Health Service, Coast and Geodetic Survey and the Coast Guard.

It is stated that approximately 800,000 persons in this category have not received medical care previously because they have not resided near military medical facilities.

The Illinois State Medical Society, at a special meeting of its House of Delegates, August 19, voted unanimously to join in this program. Those who know Gen. Robinson are certain he will do an outstanding job in his new assignment.

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Anton J. Carlson 1875 1956

One of the nation's foremost physiologists, Dr. Anton J. Carlson, died in Billings Hospital, Chicago, on September 2, 1956. Dr. Carlson was associated with the University of Chicago for 52 years. He was born on a farm in Sweden, Jan. 29, 1875 and his first job was that of a goatherd. At the age of 16 he came to Chicago, where he joined an older brother.

He frequently stated that when he landed, he knew just three words in English — one was "yes", one was "no" and the third, was not printable. Known as "the grand old man of science," Dr. Carlson was a past president of the American Association for the Advancement of Science, and held honorary degrees in medicine, law and science from seven universities and colleges. He received a bachelor's degree from Augustana College in 1898. In 1903 he took his Ph.D. in biology at Leland Stanford University.

As professor of physiology at the University of Chicago, he was known by many members of the medical profession as "Ajax" Carlson. He wrote many books, and published many articles on scientific subjects. Long interested in research, one of his early interests was relative to hunger. He showed that hunger is independent of appetite, and he frequently criticized physicians who insisted on a rigid baby feeding schedule. He said, "feed them when they're hungry."

Dr. Carlson, who lived at 5228 S. Greenwood, Chicago, is survived by his widow, Esther; two sons, Dr. Alvin J., a thoracic surgeon in Dayton, Ohio, and Robert B., and a daughter, Mrs. Alice Hough.

Many thousands of his students, and friends throughout the nation, will long recall his teachings, and will never forget him as one of the greatest scientists of all times.

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Distinguished service award to Dr. and Mrs. Gibbs

A world-renowned Chicago medical research team, Dr. and Mrs. Frederic A. Gibbs, has been chosen to receive the annual Distinguished Service Award of the Illinois Inter-professional Council, representing 25,000 members engaged in medical practice and allied fields.

Dr. Gibbs, professor of neurology, and his wife, Erna, research assistant in electroencephalography, both on the staff of the University of Illinois College of Medicine, are recognized in medical centers throughout the world as authorities on epilepsy and in the technique for recording the electrical waves from the brain. They have been associated with the university since 1944.

Together they helped organize and staff the Consultation Clinic for Epilepsy at the College of Medicine. They have labored to improve the facilities for treatment of brain-related illnesses and to develop increased potential for research

and teaching in their home state and throughout the nation.

Dr. Edward A. Piszczek, president of the Council, said in announcing the award that the Gibbs team was being recognized "for their dedicated efforts for the betterment of the health and welfare of the people of Illinois through their work."

Harry E. Levin, chairman of the committee which selected Dr. and Mrs. Gibbs from a field of several nominees, said the interprofessional group will present the research team with a plaque at the organization's annual banquet on Dec. 3 in the Congress Hotel.

The Illinois Interprofessional Council represents members of the Illinois State Medical Society, Illinois State Dental Society, Illinois Optometric Association, Illinois Chiropody Society, Illinois Pharmaceutical Association and the Illinois State Veterinary Medical Association.

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A new vasodilator

Choline theophyllinate was tried in 72 ambulatory patients with angina pectoris. Forty-two cases received the drug, while 28 received a placebo. Neither the patient nor the doctor knew whether the drug or the placebo was used (double-blind method). The results proved that in the majority of cases no suggestive influence was involved in the results. No sedative effect was ascertained and tolerance was good. The clinical improvement resulting from the drug was remarkable but gradual in its onset. It was revealed by a decrease in the number of the attacks of pain and in their severity, as well as in the partial or total discontinuance of nitroglycerin. Working capacity and the ability to walk without pain also were increased. The electrocardiogram at rest improved only in a few exceptional cases. The electrocardiogram recorded after a two-step test usually was comparable to that recorded prior to therapy. However, this apparent lack of change was due to the fact that most patients were unable to complete the test before therapy but could complete it afterward. When the number of steps in the test before and after treatment were identical, no changes followed exertion after therapy in some cases, in contrast with the deterioration of the tracing produced by exertion before therapy. This represented objective evidence of the effect of the drug. The mechanism of action of the drug is discussed. It is concluded that the effects are not due to its vasodilating action. Three possible effects are discussed: decreased load on the left ventricle, production of enzymes in the myocardium, or inactivation of pressor amines in the heart muscle. The last two would improve the utilization of oxygen by the heart. However, no conclusion was reached in regard to the action of the drug. *Christ Aravanis, M.D. and Aldo A. Luisada, M.D. Results of Treatment of Angina Pectoris with Choline Theophyllinate. Ann. Int. Med. June* 1956.

MEDICAL ECONOMICS

WHAT IKE WANTS IN HEALTH INSURANCE

PART ONE

Marion B. Folsom, secretary of health, education and welfare, told the American Hospital Association (September '56) that the Eisenhower administration will continue to seek legislation for re-insurance funds for improvement in voluntary health insurance.

Folsom said that there are still about sixty million Americans without any form of hospital insurance, seventy-six million without surgical insurance protection, and over one hundred million without general medical coverage.

Since voluntary companies must be encouraged not only to cover the above-mentioned persons, but must be encouraged to broaden their present plans, the government must seek legislation to provide the backing of federal re-insurance. This will speed the further advancement of voluntary health insurance by permitting the risk to experiment and venture into new fields, such as coverage for long term illness, home or office calls, nursing and diagnostic services, and help for the low income groups, older persons, and those in rural areas.

The best comment on this speech was in his conclusion as stated by Folsom himself: "All of us should recognize that the problem of paying for medical care for all the people will yield to no easy or overnight solution. Under voluntary health insurance, progress will stem primarily from the initiative and creative spirit of free enterprise."

PART TWO

S. 4172 (introduced by Senators Hill, D. Ala., and Smith, R. N. J.) *H.R. 12140* (introduced by Congressman Thompson D. N. J.) and *H.R. 12153* (introduced by Congressman Priest D. Tenn.) are the administration's measure " to encourage the extension and improvement of voluntary health prepayment plans or policies by permitting pooling."

This is a redraft of the re-insurance scheme. These measures were referred to the Committee on Labor and Public Welfare.

FEDERAL EMPLOYEE HEALTH INSURANCE

At the last session of Congress, the House Post Office and Civil Service Committee conducted hearings on a proposal for major medical cost insurance of all federal employees. No legislation resulted from the hearings, since Blue Shield, Blue Cross, American Hospital Association, and some labor leaders opposed it. The latter groups wanted payroll deductions to pay for this (employee). The administration wanted federal contributions alone (you and I) to pay for it.

The committee is now making a survey to find the best mechanism to obtain this coverage for federal employees. We hope that we will give them this information, as a group and as individuals. TALK TO YOUR CONGRESSMAN NOW!

In a pre-election campaign speech, Adlai E. Stevenson proposed that federal funds assure comprehensive health insurance for everyone in the United States. He emphasized that there should be no restriction on the individual's freedom to choose his own doctor.

He outlined three major goals:

1. "We must be sure that medical research is not held back by lack of funds."
2. "We must train enough doctors, dentists, nurses, etc. so that all genuine needs for medical care can be met."
3. "We must build enough hospitals and other facilities that all genuine needs for institutional care can be satisfied."

TOTAL BLUE SHIELD ENROLLMENT IN THE U. S. A

37,000,000 Americans (June 30, 1956).....

THE RISING COST OF MEDICAL CARE

A recent survey by the Bureau of Labor Statistics showed the consumer price index to be 114.9 (1947-49=100). A categorical breakdown showed the food index at 109.6, housing 120.8, apparel 104.8, transportation 126.4, personal care 119.5, reading and recreation 108.2, miscellaneous goods and services 121.4, and at the top, medical care 131.6. This is an all time high for medical care.

One might wonder if this rising cost in medical care is a general one or due specifically to the rising cost of hospitalization, drugs or allied medical services rather than the physician's fee per se. In any event, what are we doing about this inflation?

HELP FOR THE INDUSTRIAL NURSE

The AMA's booklet "Guiding Principles and Procedures for Industrial Nurses", compiled by the Council on Industrial Health, has proved to be just what the doctor ordered.

HOSPITAL DRUG STANDARDIZATION

Some hospitals have recently adopted the custom of standardizing drugs. If a certain drug is manufactured by several companies under their different trade names, only one such drug is kept on hand at the hospital. Should you order the drug by a different brand name, the hospital pharmacist uses only the one on hand. In essence, he is permitted to substitute a generic name drug for a brand name drug.

The hospital follows this procedure to save costs, presumably under the direction of the medical staff, through its pharmacy committee.

Is this legal? When drug A is ordered, the pharmacist must fill the prescription only and definitely as ordered. He may choose the brand only when you order the drug by its generic name. What is the policy at your hospital? What is your opinion of this practice?

"MEDICARE"

What does "Medicare" mean? Are you ready for it? "Medicare" will be in action on December 8, 1956. You had better be informed before that time!

WISCONSIN LOOKS TO THE FUTURE

The Wisconsin State Medical Society president, Dr. L. O. Simenstad, has called for a look into the future of Blue Shield. "Blue Shield is not only a plan, but a philosophy. There is no turning back," he said. He suggested the establishment of a Blue Shield study program. This should be at local or district levels and coordinated at the state level. He recognizes that Blue Shield plans influence each other because the public thinks of Blue Shield as a nationwide development. Yet problems do vary in different localities.

Certainly this is a step forward. Shall we in Illinois join our neighbor to the north, or shall we let them do all the work?

SOCIAL SECURITY FOR PHYSICIANS

How much do you know about Social Security? Will you as a physician benefit from this program? Do you want to be "included in" or "included out"?

Read your JAMA for some solid information on Social Security. We hope to present the pros and cons in this column in the near future.

Do your own investigation now. "Investigate before you invest!"

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THE P. R. PAGE

Edward A. Uzemack, Director of Public Relations

WHEN the federal government's "Medicare" plan goes into operation on Dec. 8, the medical profession will have an opportunity to demonstrate its finest public relations manners.

In effect, this is a program that the nation's physicians asked for — a program under which dependents of military personnel will receive medical and hospital care through civilian sources. Public Law 569, the formal title of enactment for "Medicare," is not the ideal solution to the problem, from the profession's viewpoint, but it does represent a big step in the right direction.

For a number of years the profession has complained that the peacetime draft of doctors had been kept alive for the primary purpose of providing medical care for dependents of military personnel. Now the government has set out to make greater use of civilian facilities and it will be up to non-military physicians to prove that they can do the job satisfactorily.

Each state medical society has been asked to designate a fiscal agent to negotiate a working agreement with the government. In addition, the medical societies have been requested to submit a table of fee schedules for use in the program. The government has indicated a willingness to co-operate fully with private physicians in making the "Medicare" program a success.

If every physician will do his utmost to make this plan work, his efforts will reflect favorably upon the profession as a whole.

WHAT AMERICANS THINK OF THE MEDICAL PROFESSION

Early this year the American Medical Association published a report on what Americans think of the medical profession. It was based on a public opinion survey made by an independent research organization, Ben Gaffin Associates of Chicago.

Personal interviews were conducted with 3,000 members of the general public, 500 physicians in private practice, and 100 persons in each of five special groups — editors, columnists and commentators, lawyers, pharmacists, registered nurses and executive secretaries of state and county medical societies.

In general, results of the survey were heartening and tended to support what informed individuals already believed — most Americans are fond of their personal physicians but hold in lower esteem "other" doctors. It was also found that editors, lawyers and druggists have a less favorable attitude towards the medical profession than does the public. Furthermore, physicians tended to be more critical of their own profession than were the members of the other groups surveyed.

The fact that the vast majority of Americans are fond of their personal physicians indicates

that people primarily appreciate that which they experience through personal contact. When they rely on hearsay their impressions are easily distorted. The public opinion survey would seem to prove that the individual physician's daily contact with his patients is the most important factor in the maintenance of good public relations for the profession.

This business of public relations is a two-way proposition. We get out of it only what we put into it. If all physicians were to become smug over the knowledge that most of their own patients regard them as great guys, we would start moving backwards in the realm of medical public relations.

We know now that there is great need for physicians to promote their colleagues as well as to sell themselves to the public. We also know that one of the biggest jobs before us is the matter of public relations within the profession itself. The survey showed that there are more physicians who have a high regard for the American Dental Association than there are those who think well of their own organization, the A.M.A. It further showed that only half the members of the A.M.A. are active at state and local levels, and only half the members even know how much dues they pay to the A.M.A.

In the past, much of our public relations effort has been of a defensive nature. We have been extremely sensitive to criticism and have developed many of our PR programs as a means of replying to our critics. We have tended to become apologists for the profession; and this is a role that is not becoming to physicians or those who work for them. There is more than enough good in the accomplishments of the profession to give us a base for a positive approach to public relations projects.

The A.M.A.'s report on the public opinion survey, entitled "What Americans Think of the Medical Profession," is an invaluable aid to the planning of any public relations program in medicine. You may still obtain a copy of this report, free of charge, by writing to the Director of Public Relations, Illinois State Medical Society, 185 N. Wabash Avenue, Chicago 1, Illinois.

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Cardiac rupture

Since cardiac rupture is found in 0.35 per cent of all autopsies and 9 per cent of acute fatal myocardial infarctions, this lesion should not be considered rare as it has been in the past. The success of modern medicine has magnified the field of geriatrics. In turn, myocardial infarction and its complications, including rupture of the heart, are more frequently encountered as the general population advances in age. None of the methods of treatment of myocardial infarction analyzed in the present study could be considered responsible for the recent higher frequency of cardiac rupture. It would be expected, however, that the injudicious use of levarterenol or anticoagulants or the abuse of the bed-and-chair regimen might result in rupture of the heart. A further evaluation of these procedures seems to be indicated. Unlike other complication of myocardial infarcts, the art of prevention seems to be the only solution to the problem of cardiac rupture. Rest must be emphasized during the early period after infarction, when the diagnosis is being established. Hypertensive patients and those who have no evidence of heart failure in particular must be kept at rest if rupture is to be prevented. *John F. Maher, M.D. et al. Rupture of the Heart after Myocardial Infarction. New England J. Med. July* 5, 1956.

CORRESPONDENCE

Clinics for crippled children listed for December

Seventeen clinics for Illinois' physically handicapped children have been scheduled for November by the University of Illinois Division of Services for Crippled Children. The Division will count 10 general clinics providing diagnostic orthopedic, pediatric, speech and hearing examination along with medical social and nursing service. There will be 3 special clinics for children with cardiac conditions, 2 for children with rheumatic fever and 2 for cerebral palsied children.

Clinics are held by the Division in co-operation with local medical and health organizations, both public and private. Clinicians are selected among private physicians who are certified Board members. Any private physician may refer to or bring to a convenient clinic any child or children for whom he may want examination or may want to receive consultative services.

The December clinics are:

December 4 - Carmi, Carmi Township Hospital

December 5 - Hinsdale, Hinsdale Sanitarium

December 5 - Rock Island (Cerebral Palsy), Foss Home, 3808 - 8th Avenue

December 11 - E. St. Louis, Christian Welfare Hospital

December 11 - Effingham (Rheumatic Fever), St. Anthony's Hospital

December 11 - Peoria, Children's Hospital

December 12 - Alton (Rheumatic Fever), Alton Memorial Hospital

December 13 - Elmhurst (Cardiac), Memorial Hospital of DuPage County

December 13 - Springfield, - St. John's Hospital

December 14 - Chicago Heights (Cardiac), St. James Hospital

December 18 - Peoria, Children's Hospital

December 19 - Elgin, Sherman Hospital

December 19 - Chicago Heights General, St. James Hospital

December 19 - Springfield (Cerebral Palsy), Memorial Hospital

December 20 - Bloomington, (A.M.-General - P.M. - Cerebral Palsy), St. Joseph's Hospital

December 20 - Rockford, St. Anthony's Hospital

December 21 - Chicago Heights (Cardiac), St. James Hospital

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Alfred A. Schiller memorial fund

The Alfred A. Schiller Memorial Fund which will provide an annual lectureship, is being established at the University of Illinois College of Medicine in honor of Doctor Schiller, Assistant Professor of Physiology, who died unexpectedly in April, 1955. Colleagues and former students may send contributions to the fund in care of Dr. George E. Wakerlin, 1853 W. Polk Street, Chicago 12, Illinois.

Dr Barth honored

At the Fall meeting of the Board of Chancellors, American College of Radiology, in Los Angeles, September 27-28, Dr. Earl E. Barth was elected Chairman of the Board for 1957.

Dr. Barth, from Chicago, will assume the chairmanship following the midwinter meeting of the Chancellors, February 6 and 7, 1957, at the Drake Hotel in Chicago. He succeeds the retiring Chairman of the Board, Dr. Earl R. Miller, of San Francisco. At the same Los Angeles meeting, Dr. Fay H. Squire, also of Chicago, was re-elected Treasurer of the College.

Dr. Barth is in the private practice of radiology in Chicago. He is also Professor of Radiology at the Northwestern University Medical School. During the past two years he has served as a member of the Executive Committee of the College Board of Chancellors, and prior to that he had been Treasurer of the College for several years. He has been vice President and Chairman of the Executive Council of the American Roentgen Ray Society, a scientific radiological group, and he served as Treasurer and member of the Executive Committee of the Fifth Inter-American Congress of Radiology in April 1955. He is currently chief consultant in radiology at the VA Research Hospital in Chicago.

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Postdoctoral fellowships

December 1, is the deadline this calendar year for submitting applications to the National Foundation for Infantile Paralysis for postdoctoral fellowships. Applications submitted before that date will be considered by the appropriate National Foundation Fellowship Committee in February.

Postdoctoral fellowships are available (a) in Rehabilitation, either the concept and basic techniques applied to specialized fields in medicine, or for preparation in the specialty of Physical Medicine and Rehabilitation; (b) in Psychiatry; (c) in Orthopedics; (d) in the Management of Poliomyelitis; (e) in Preventive Medicine; (f) for postdoctoral training in research and/or academic medicine.

In addition to a montly stipend which varies from $3,600 to $6,000 annually according to the individual needs and marital status of the applicant, the National Foundation arranges for compensation to the institution according to the program undertaken. For a full academic program, tuition and fees are paid; for other programs, a sum not to exceed $1,250.00 per year including tuition. Partial fellowships are available for qualified veterans to supplement G. I. educational benefits.

The next deadline for applications will be March 1 for consideration in May.

For further information write: Division of Professional Education National Foundation for Infantile Paralysis 120 Broadway New York City, N. Y.

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You and your magazine

Doctor, if you have Today's Health in your reception room it means you are practicing a public service called the 3 Rs program — Reception Room Readership — and that is good. If you do not have Today's Health in your office, you are missing the opportunity to inform your patients on matters pertaining to the maintenance of good health in language that they can understand.

A medical man has his medical journals and publications to rely on for help and information, the layman has Today's Health. It is every doctor's responsibility to make this magazine available to his patients, friends and neighbors.

Through this medium of health information, respect for the medical profession and its high standards can be encouraged while quackery and propaganda can be discouraged.

"When was honey ever made from one bee in a hive?" This quotation applies to every one. Doctor we need you and your help in the Today's Health program. Have it in your reception room, give it for Christmas to patients, relatives and friends. Let us follow the advice of the Illinois Auxiliary President, Mrs. Robert E. Dunlevy: "Buy a copy. Give a copy. Sell a copy."

Please contact your County Auxiliary Today's Health chairman, your State chairman or the office of Today's Health, American Medical Association, 535 North Dearborn, Chicago 10, Illinois. For physicians and dentists there are special half-price rates (one year $1.50).

Mrs. Wendell F. Roller
Illinois Today's Health Chairman
Monmouth, Illinois

Symposium on immunology

A symposium on immunology will be presented by the Milwaukee Academy Of Medicine at Marquette University, Brooks Memorial Union on Saturday, December 1, 1956 - 9:00 a.m. to 4.00 p.m.

The faculty will be Frank J. Dixon, Jr., M. D. Professor and Director, Department of Pathology University of Pittsburgh School of Medicine; T. N. Harris, M. D. Associate Professor of Immunology in Pediatrics University of Pennsylvania; William B. Sherman, M. D. Associate Clinical Professor of Medicine Columbia University College of Physicians and Surgeons; Carl V. Moore, M. D., Dean Washington University School of Medicine; and Theodore L. Squier, M. D. Associate Clinical Professor of Medicine Marquette University School of Medicine

All physicians are welcome to attend and there is no registration fee. Luncheon will be served at the Union. Reservations may be made by writing to the Milwaukee Academy of Medicine, 561 N. 15th Street, Milwakee 3, Wisconsin.

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Illinois pathologists to meet

The fall meeting of the Illinois Society of Pathologists will be held on December 1 at St. Johns Hospital in Springfield. The program follows:

SLIDE SEMINAR 9:00 a.m. on 12th Floor

Moderator: Grant C. Johnson, M. D., pathologist, Memorial Hospital, Springfield clinical assistant professor of pathology, University of Illinois.

Panel Members: Harold D. Palmer, M. D., pathologist, St. Johns Hospital, Springfield; Paul E. Steiner, M. D., professor of pathology, University of Chicago; Mark C. ology, University of Chicago; Mark C. Wheelock, M.D., pathologist, Passavant Memorial Hospital, Chicago and associate professor of pathology, Northwestern University.

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The prevalence of tuberculosis sensitivity

Tuberculin sensitivity was studied during 1949-51 in more than 12,000 white men and women 17-21 years of age, by testing with the intermediate (0.0001 mg.) dose of the international standard tuberculin PPD-S. The study population comprised navy recruits from all parts of the country, tested as they entered the Naval Training Center at San Diego, Calif., and students, mostly freshmen, attending colleges and universities in 17 states. Residence histories obtained from each person at the time of the testing provided material for studying geographic differences in the prevalence of tuberculin sensitivity. The average frequency of reactors was 8.8 per cent, corresponding to an annual infection rate of less than five per 1,000 during the last two decades. However, prevalence rates among navy recruits ranged from about 20 per cent in lifetime residents of Arizona and New Mexico to less than 4 per cent in Idaho and Nebraska. Rates in the college students, while generally lower, reflected similar geographic differences. Residents of metropolitan areas generally had higher rates than farm residents. A high positive correlation was found between the frequency of reactors among the navy recruits and tuberculosis death rates in the white populations of their home states. *Carroll E. Palmer, M.D. et al. Tuberculin Sensitivity in Young Adults in the United States. Pub. Health Rep. July* 1956.

AT THE EDITOR'S DESK

THE October issue of Medical Economics carried its eighth quadrennial survey of the income of physicians. The self-employed radiologist has replaced the neurosurgeon as top money maker; he nets $25,040 annually, or $52 a year more than the neurosurgeon. The orthopedic surgeon, with $24,967, is followed by the plastic surgeon, whose net earnings are $23,050. The survey indicates that the self-employed GP now nets $14,817 while the self-employed specialist nets $18,010. But the typical GP need not be too concerned because he earns more than the typical internist and the self-employed specialist in physical medicine, industrial practice, and pulmonary disease. In this respect, he has passed several specialists in income and may be gaining on others.

The heart conscious physician may be interested to know that the lowest mortality rates for coronary disease among white males of all ages in 1950 was in New Mexico, followed by Arkansas and Kentucky. The highest were in New York, Rhode Island, and the District of Columbia.

A fatal case of listeriosis in an infant was reported by the Connecticut State Department of Health. The child appeared normal at birth but developed fever and rapid respiration on the next day. A chest X-ray showed an area of consolidation in the left upper lobe and a blood culture was positive for Listeria monocytogenes. The mother had no contact with animals, except the family dog, while she was pregnant. A gram-positive motile organism was isolated from the mother's cervix but it has not yet been identified.

A report in the Canadian Anesthetists' Society Journal states that Demerol and scopolamine produced satisfactory analgesia in obstetrical cases, with less depressant effect on respiration than that given by other drug combinations.

Ciba announced the introduction of a new product — Vioform Hydrocortisone — as a remedy for detergent hands, eczema, and various chronic skin conditions. The preparation is a nontoxic water washable cream.

Many news releases follow a typical pattern such as: "For the first time, millions of Americans can look forward to sure, direct relief of muscular and neuralgic aches and pains without counterirritation or injection, thanks to medical science. . . . . ." The size of the market is mentioned and the claims of the manufacturer are stated in glowing terms. The term, medical science, gives the copy an authentic and a scientific touch. It sounds wonderful but the majority of editors see through such blurbs. This is free advertising, not news, and if they want advertising they ought to direct their correspondence to the proper department.

Sterling Drug Inc. continues to have a major interest in aspirin. This time they recommend "trial with aspirin suggested as first step in cancer pain." Physicians usually start with a simple remedy and a news release of this type backs them up.

NEWS of the STATE

ADAMS

Society News.—Dr. Gordon Perisho, Quincy, addressed the October 8 meeting of the Adams County Medical Society on "Radioisotopes in Practice."

COOK

Courses on Pediatric Cardiology.—Three intensive postgraduate courses in pediatric cardiology began November 5 for two weeks. They included a one week course in the diagnosis and treatment of congenital and rheumatic heart disease, and two courses of three days each in roentgenology and electrocardiography in heart disease, and in angiocardiography and catheterization of the heart and great vessels. The courses were designed for pediatricians, roentgenologists and internists. They were conducted at Cook County Graduate School of Medicine by Drs. Benjamin M. Gasul and Egbert H. Fell and associates.

Lasker Award Goes to Dr. Katz.—The Lasker Award of the American Heart Association has been given to Dr. Louis N. Katz, head of cardiovascular research at Michael Reese Hospital, for "distinguished achievement in the field of cardiovascular research." The award, consisting of $1,000 and a gold statuette, of the Winged Victory of Samothrace, symbolizing victory over death and disease, was to have been presented at the annual convention of the American Heart Association in Cincinnati, October 27.

Students Honored.—Seven Northwestern University Medical School students and graduates have been honored for scholastic achievement and research.

Dr. Richard H. Young, dean, presented the awards at a Founders' Day convocation on Tuesday, October 2, in Thorne Hall on the Northwestern Chicago campus. The convocation formally opened the ninety-ninth annual session of the medical school.

The Founders Day address was delivered by Dr. Walter G. Maddock, Elcock professor of surgery. He spoke on "The Medical Student Here and Abroad".

Dr. Billy James Williamson, Hillsboro, Ohio, received the Borden undergraduate research award in medicine. This award of $500 and a certificate is given to a student in the graduating class who performed meritorious medical research while an undergraduate medical student. Dr. Williamson did research work on the effects of various chemicals on kidney function.

Winner of the George J. Dennis Phi Rho Sigma award was Dyrel Alden Faulstick, Los Angeles, Calif., who received a $100 bond for the highest scholastic average for the first three years of medical school.

A certificate of recognition was given to Phi Delta Epsilon as the medical fraternity maintaining the highest scholastic average during the past year. Dr. Joel Brumlik, Chicago, received a $50 bond as the man in the fraternity who contributed most toward winning the award.

Eugene M. Aronow, Passaic, N. J. received the Phi Chi award of $50 and a certificate. This award, named in honor of Dr. James P. Simonds, professor emeritus of pathology, is presented annually to the outstanding junior student who shows clinical achievement and promise.

Winner of the Roche award, given by Hoffmann-LaRoche Inc., for outstanding scholastic attainment during the sophomore year, was Stanley B. Vander Aarde, Orange City, Iowa. Mr. Vander Aarde was given a scroll and an engraved watch.

Jack Paul Startz, San Pedro, Calif., was the recipient of the Phi Beta Pi Leslie B. Arey award, given to the freshman student for the highest scholastic achievement in the study of anatomy. The $50 award has been named in honor of Dr. Leslie B. Arey, professor emeritus of anatomy. The fraternity

also gives $100 to the school's Archibald Church Library each year for the purchase of books for the Leslie B. Arey collection.

Faculty Promotions.—The Chicago Medical School has announced the following faculty promotions: Drs. George J. Scheff, from associate professor to professor of Microbiology and Public Health; Abe L. Aaronson, from assistant professor to clinical associate professor of medicine; Martin M. Kirshen, from associate professor to clinical professor of medicine; Meyer J. Steinberg, from assistant professor to clinical associate of medicine; Bernard Chomet, from associate to assistant professor of clinical pathology; Arnold Black, from clinical associate to clinical assistant professor of medicine; Irving A. Friedman, from clinical instructor to clinical assistant professor of medicine; Milton M. Kadin, from clinical associate to clinical assistant professor of medicine; Erwin Kammerling, from clinical associate to clinical professor of medicine; Albert J. Levine, from instructor to clinical assistant professor of medicine; Alfred L. Siegal, from clinical associate to clinical assistant professor of medicine; Earl N. Silber, from associate to clinical assistant professor of medicine and Jay J. Gold, from clinical instructor to clinical assistant professor of medicine.

Personal.—Dr. G. H. Pollock associate professor of psychiatry, and Jay E. McCormick, assistant clinical professor of psychiatry, both of the University of Illinois College of Medicine, have been named to the staff of the Institute for Psychoanalysis.—Dr. Tibor Benedek has been promoted to associate clinical professor of dermatology at Stritch School of Medicine of Loyola University.

Society News.—At a meeting of the Society of Medical History of Chicago, October 17, Dr. Francis J. Gerty, professor and head of the department of psychiatry, University of Illinois College of Medicine, spoke on "The Story of Three Women", and Dr. Joseph H. Kiefer, associate professor of urology at Illinois, "The History of Lithotomy."

Special Lectures.—Dr. Rachmiel Levine, chairman of the department of medicine, Michael Reese Hospital, and professorial lecturer, department of physiology, University of Chicago, delivered the Eighth Annual Phi Delta Epsilon Lectureship, October 29-31, on "The Endocrine Control of the Metabolism of Foodstuffs." Titles of the individual lectures were "Carbohydrate Metabolism"; "Protein and Fat Metabolism", and "The Nature of Hormonal Regulation."

Dr. Hans Ludvig Kottmeier, chief of the gynecological department, Radiumhemmet, and associate professor, Royal Karolinska Institute, Stockholm, Sweden, delivered the Solomon Theron De Lee Lecture at the Albert Merritt Billings Hospital, October 10. His subject was "Treatment of Uterine Carcinoma at the Radiumhemmet."

Dr. Ray New Head of Orthopedics at Illinois.—Dr. Robert D. Ray became professor and head of the department of orthopedics at the University of Illinois College of Medicine, September 1, filling the vacancy created by the death of Dr. Fremont A. Chandler in December 1954. Dr. Claude N. Lambert had been acting head. Dr. Ray, prior to coming to Chicago, was associate professor of surgery and head of the division of orthopedic surgery at the University of Washington College of Medicine, Seattle.

Award to Edward Compere.—The President's Academy Award of the American Academy of Physical Medicine and Rehabilitation was presented to Dr. Edward L. Compere recently. Dr. Compere, professor of orthopedic surgery at Northwestern University Medical School, received the honor in recognition of his outstanding work in restoring people to health and his leadership in developing the Liberty Mutual Rehabilitation Center of Chicago. Chicago physicians who were elected to office in the academy are Drs. Louis B. Newman, vice president, and Dorothea C. Augustin, assistant secretary-treasurer. The academy also gave its third place bronze medal to Drs. Arthur A. Rodriquez and Y. T. Oester, and John Fudema, R.P.T., and J. A. Fizzell, R.P.T., all of Chicago, for their scientific exhibit "Electromyography in Clinical Practice."

HENRY

Joint Meeting with Clergy and Physicians.—Dr. Herman Chor, attending neuropsychiatrist at Wesley Memorial Hospital, Chicago, addressed the Henry County Medical Society, November 14, on "Psychiatric Correlation of Medical and Religious Approach to the Patient." All members of the Clergy of the County were guests of the society at this meeting.

LAKE

New Members.—At the September 11 meeting of the Lake County Medical Society, the transfer of membership of Dr. Benjamin Rappaport from the Chicago Medical Society was approved. In addition, the following three physicians were accepted into membership: Drs. Charles A. Linke, 900 Old Trail, Highland Park; Walter L. Modaff, 225 Center Street, Grayslake, and Michael Cejtin, 1021 Glen Flora, Waukegan.

MADISON

Society News.—"Rehabilitation of the Cardiac in Industry" was the subject of Dr. Lee B. Harrison, physician-in-chief at Missouri Pacific Hospital, St. Louis, before the Madison County Medical Society, October 4, at the Madison County Sanatorium, Edwardsville.

MORGAN

Physicians Entertain Lawyers and Wives.—The Morgan County Medical Society entertained members of the Bar Association and their wives, October 2, at the Dunlap Hotel, Jacksonville. Following

a social hour and dinner, Mr. Alfred F. Newkirk, Springfield, discussed medical-legal problems.

PEORIA

Personal.—The Medical and Surgical Clinic, 1002 North North Street, Peoria, has announced the association of Dr. Joseph S. Solovy, internist.

"Mock Trial"—"The Doctor as a Medical Witness."—The Peoria Medical Society held a meeting in conjunction with the Peoria Bar Association, October 16, on "The Doctor as a Medical Witness." Four representatives of the Law Department of the American Medical Association participated in a mock trial. Participants were C. Joseph Stetler, Director of the AMA Law Department; Ralph E. DeForest, M.D., Secretary of the Council on Medical Physics; Mr. Edwin J. Holman and Mr. William J. McAuliffe, Jr., both of the Law Department. In "mock trial" form, the lawyers and physicians acted out a case exactly as it would be done in court. In fact, they acted it twice—once to show "how not to do it" and once to show "how to do it".

In the "how-not-to-do-it" part of the "mock trial", it was easy to see how useless an "expert witness" can be if neither he nor the attorneys are prepared or know how to present their facts. The doctor, according to a news release, was not much help to the injured railroad man trying to collect damages for a permanent back injury.

"The defense attorney who was well-prepared and aggressive asked all the right questions—the ones the doctor couldn't answer. The doctor didn't have any records with him to refresh his memory, either, and when he did answer questions he sounded like an ancient medical textbook. The railroad man didn't recover a penny.

"The plaintiff was luckier in the second run-through of the trial, which was adapted from actual court records. This time, according to the release, the physician knew his case down to the last nerve, muscle and bone. Furthermore, he had his detailed records to back him up, and he explained them in simple words. He even brought along a shadow box to show illuminated x-ray films, and charts to show what and where the injury was. Speaking clearly and without the squirming manner of the "how-not-to-do-it" witness, he could have convinced anyone that his facts and conclusions were indisputable.

"The point of the whole show was to teach doctors and lawyers how to present their cases thoroughly and accurately, so that a just decision can be made in cases requiring expert medical testimony.

"Pointing out the need for educating doctors and lawyers in courtroom technique, Mr. Stetler said that between 50 and 60 per cent of all court cases involve a personal injury and require physicians as witnesses. In addition, many other kinds of cases have aspects which make it imperative for a judge or jury to have authentic medical testimony; for instance, contests of wills, life insurance suits in which the manner of death makes a difference in the amount of payment; and criminal cases from simple assault to murder."

The medical witness, Stetler explained, should not be on anyone's "side". Although he may be called by the plaintiff of the defendant, he should testify only to his medical findings and should not "color" his testimony in an effort to prove the case for one side.

ST. CLAIR

Society News.—The St. Clair County Medical Society was addressed in East St. Louis, October 4, by Dr. Stanley Hampton.

SANGAMON

Society News.—Dr. Carl V. Moore, Busch professor of medicine and head of the department of internal medicine, Washington University School of Medicine, St. Louis, addressed the Sangamon County Medical Society, October 4, at the Elks Club, Springfield, on "Newer Knowledge of the Purpuras."

VERMILION

Society News.—Dr. William S. Dye, instructor in surgery, University of Illinois College of Medicine, Chicago, addressed the Vermilion County Medical Society in Danville at the Hotel Wolford, October 2, on "Medical and Surgical Aspects of Peripheral Vascular Disease."

GENERAL

Merit Increases for Welfare Employees.—On October 4 Governor William G. Stratton announced the fifth merit increase in his administration, affecting approximately 7,000 employees of the Illinois Department of Public Welfare. The five merit increases have totaled $4,109,000 and have been provided within the operating appropriations of the department. No special appropriations were received to accomplish this purpose, according to a news release.

Society News.—Chicago participants on the program of the Gerontological Society in Chicago, November 8-10, included Drs. John R. Wolff and Howard Ganzer of the Cancer Prevention Center on "The Detection of Uterine Cancer in Women After Sixty."

Ed Uzemack Chosen "Man of the Week."—"Meet Mr. BIG" is the title of a column in *The News* of Niles Township by-lined by Sheryl Leonard, and featuring someone who has acquired an outstanding reputation in the community. The issue of September 20 announced the selection of Edward A. Uzemack, Skokie, Assistant Secretary and Director of Public Relations of the Illinois State Medical Association, as "Man of the Week." Mr. Big is representative of *B*usiness, *I*ndustry and *G*overnment. The *News'* story reviews the scholastic and occupational background of Uzemack, his membership in the Upper Lincoln PTA, in which he also

serves as co-chairman of publicity. It points out that he is director of the East Side Property Owners' Association, active in boy scout work, a member of the Chicago Press Veterans Association, the National Press Club and Sigma Delta Chi Fraternity, and of the Medical Society Executives' Conference.

According to the *News*, "the three years Uzemack spent in the Army were ones he shall never forget. He saw action in Germany during the Battle of the Bulge. For three and a half months he was a prisoner of War. These horrible months were spent in Stalag 9B—once a concentration camp.

"In order to keep occupied, he and two other newspaper men, also prisoners, got together to put out a daily newspaper. Fellow prisoners gave up their small supply of paper, and they put out a one sheet newspaper. This hand printed news sheet was sent from barracks to barracks. The news was obtained from one of the guards who detested the Nazi regime—and would pass information on to them, and from some of the French prisoners who had built a radio which they concealed in a cigar box. This tiny radio was taken apart and reassembled every day, in order to escape detection.

"News items from BBC were slipped to Ed on pieces of cigarette paper. All kinds of devious means were used to put out this one page news to the prisoners.

"The three newspaper men also organized a recreational and educational program. Each day Uzemack would give daily news analysis. In this manner, the men tried to keep their minds alert and away from the deprivation and hardships they suffered.

"To hear Ed", the News story says, " a great towering man, speak of his fondest hobby, is almost a paradox unto itself. He enjoys baking pies. Not ready mixed ones, but fresh ones. His children think him the greatest!

"It is easy to see, after spending a few moments with Ed Uzemack, that with his warmth and friendly personality, why Ed Uzemack is one of the top public relations men in the country."

Ed. Note—Congratulations, Ed.

Rehabilitation Institute Plans Expansion.—Plans are under way to launch a $1,500,000 remodeling program at the Rehabilitation Institute of Chicago, 401 East Ohio Street. When the renovation is completed sometime in June 1957, the third floor of the four story structure will contain facilities for forty-seven beds for in-patient training. Under the present set-up, services are available to out-patients only.

The institute, which has been operating since 1951, is not limited to any geographic boundary, but accepts patients on a medical referral only. While the greatest number of patients are amputees and cardiacs, all types of physically handicapped patients are served with three exceptions: blind, deaf and severe mentally ill.

Support for the institute comes from the Veterans' Administration, Northwestern University Medical School and the institute itself, whose funds stem from business and industry. Part of the remodeling cost will be defrayed with funds made available under the Hill-Burton Act.

The institute now houses facilities for occupational and physical therapy, psychological testing and job placement services, and administrative offices. One of the features of the remodeling program will be the conversion of the basement into research laboratories to determine and evaluate new types of prostheses.

Since its opening, the institute has cared for 900 patients, enabling most of them to be self-sustaining. The work classification unit is a cooperative project of the institute and the Chicago Heart Association. Thus far, the Placement Service has found it more difficult to find jobs for cardiac patients than amputees.

On October 9-10, specially conducted tours of the institute were a part of National Employ the Physically Handicapped Week.

The experience was a heart-warming one for this reporter. The aids to help restore these patients to a comparatively normal life are extensive and planned to anticipate every need—from devices designed for the wheel chair patient to those for a patient having the use of one hand only or no hands. The entire program aims for restoration for employment and restoration for self-management.

Dr. Joseph Chivers is medical director of the institute. Drs. Ben L. Boynton and Angelo P. Creticos are chiefs of physical and clinical medicine, respectively. Orthopedic consultants are Drs. Clinton L. Compere, Bradley W. Carr and Coleman J. O'Neill.

1956 Care Food Crusade.—From national agricultural stockpiles, the U. S. Government has allocated to CARE, without charge, life-giving supplies of milk powder, rice, flour, beans, cornmeal and cheese. CARE assembles these staples into twelve different package assortments to meet the varying food needs in nineteen countries of Europe, Asia, the Near East and Latin America. Each package will provide a month's supplementary food for four persons. A typical package contains twenty-two pounds of foods, including five pounds of milk powder, which makes twenty quarts; five pounds of rice; five pounds of flour, and seven pounds of cheese. Every one dollar contributed to CARE (Cooperative for American Remittances to Everywhere, Inc.) guarantees delivery of a Food Crusade package as a personal gift from the donor, whose own name and address to with each package subscribed. CARE Mission Chiefs, Americans stationed abroad, will supervise distributions to needy families and institutions in West Germany and Berlin, Greece, Italy, Yugoslavia, Hong Kong, Korea, Vietnam, India, Pakistan, Colombia, Costa Rica, El Salvador, Honduras, Panama, Israel and to Arab refugees in Lebanon, Jordan, Syria and the Gaza Strip.

Emphasis is placed on reaching refugee families, families of the unemployed, widows and orphaned

children, war invalids, the aged, victims of tuberculosis and other malnutrition diseases.

Donors may designate the countries they wish to help. Contributions in any amount for the Food Crusade should be sent to CARE, 189 West Madison Street, Chicago 2, Illinois, or to your local Railway Express Agency, which accepts CARE contributions as a public service.

Fund for Sick and Disabled Physicians.—Funds are presently available under the Dr. Adolph Gehrmann Fund for Sick and Disabled Physicians. Beneficiaries are any sick or disabled physician in need of financial assistance, or the widow of any physician for a period of not more than one year after the death of the husband. The fund cannot be used as an old age pension for physicians, but must rather adhere to the statement in the will to help "in his or their attempt to regain health." Applications for assistance or inquiries for additional information should be made to The Chicago Community Trust, 10 South La Salle Street, Chicago 3, Illinois. Telephone number is Franklin 2-3356.

Lectures Arranged Through the Educational Committee of the Illinois State Medical Society:

Harry M. Hedge, Evanston, formerly assistant professor of dermatology, Northwestern University Medical School, and Past President of the Illinois State Medical Society, Woman's Auxiliary to the Aux Plaines Branch of the Chicago Medical Society, October 26, on Care of the Skin from the Cosmetic Viewpoint.

Leonard F. Jourdonais, Evanston, associate professor of medicine, Northwestern University Medical School, Park Ridge Tops #1, November 13, at the Oakton School in Park Ridge, on Dangers of Obesity.

Harry W. Southwick, clinical assistant professor of surgery, University of Illinois College of Medicine, Hurley School Parent-Teacher Association, November 13, on Recent Advances in the Treatment of Cancer.

William J. Corcoran, attending pediatrician at Mercy Hospital, Nathan Hale School Parent-Teacher Association, November 15, on Results and Present Status of the Poliomyelitis Vaccine.

George V. Byfield, clinical assistant professor of medicine, University of Illinois College of Medicine, Junior Women's Auxiliary of Elmhurst College, November 27, on Advances in Medicine.

Lectures Arranged Through the Scientific Service Committee of the Illinois State Medical Society:

Donald I. Bell, Evanston, instructor in medicine Northwestern University Medical School, Englewood Branch to the Chicago Medical Society, October 9, on Six Hour Regimen for Surgery or Acutely Complicated Diabetes.

Benjamin Pearlman, clinical assistant professor of medicine, University of Illinois College of Medicine, Bureau County Medical Society in Spring Valley, October 9, on Use of Diuretics in Heart Failure.

John L. Bell, associate in surgery, Northwestern University Medical School, Whiteside-Lee County Medical Societies in Rock Falls, October 18, on Treatment of Burns.

Charles D. Krause, clinical assistant professor of obstetrics and gynecology, University of Illinois College of Medicine, Bureau County Medical Society in Princeton, November 13, on Toxemias of Pregnancy.

James S. Schoenberger, clinical assistant professor of medicine, University of Illinois College of Medicine, Englewood Branch to the Chicago Medical Society, November 13, on Management of Acute Renal Failure.

Mitchell A. Spellberg, associate professor of medicine, University of Illinois College of Medicine, Stock Yards Branch of the Chicago Medical Society, November 16, on Management of Ulcerative Colitis and Sequelae.

Robert A. DeBord, Peoria, member of the staff of St. Francis Hospital, Effingham County Medical Society in Effingham, December 10, on Thoracic Surgery in Infants and Children.

Peter J. Talso, associate professor and assistant chairman of the department of medicine, Stritch School of Medicine of Loyola University, Kankakee County Medical Society in Kankakee, December 18, on Collagen Diseases.

Howard L. Penning, Springfield, Montgomery and Macoupin County Medical Societies in Litchfield, December 19, on Office Gynecology.

Winston H. Tucker, Director, Evanston Health Department, Stock Yards Branch of the Chicago Medical Society meeting jointly with the Engelwood Branch, December 21, on Recent Advances in Poliomyelitis.

Postgraduate Conference.—On October 11, a Postgraduate Conference was held at the Pekin Country Club, Pekin, under the auspices of the **Postgraduate Education Committee** of the **Illinois State Medical Society** in cooperation with the faculty of the **Cook County Graduate School of Medicine of Cook County Hospital,** and with the **Tazewell County Medical Society** acting as host.

Speakers at the afternoon session were **Drs. Donald D. Kozoll,** associate professor of surgery, on "Gastrointestinal Bleeding"; **Anthony J. Nicosia,** associate professor of surgery, on "The Acute Abdomen"; **Armand J. Littman,** associate professor of medicine, on "Geriatric Problems in General Practice". Discussants will include **Drs. Robert G. Rhoades, Rudolph A. Helden,** and **James I. Weimer. Dr. Jacob E. Reisch,** Springfield, Councilor for the Fifth District, presided.

Dr. Adam Slaw, Delavan, president of the Tazewell County Medical Society, presided at the dinner. Speakers were **Dr. Reisch,** on "Current Medical Problems", and **Mr. Walter L. Oblinger,** Springfield, Associate Counsel of the Illinois State Medical Society, "Preview of the 1957 Legislature."

In the afternoon, wives of physicians were entertained by the Woman's Auxiliary to the Tazewell County Medical Society.

DEATHS

William A. N. Dorland*, retired, Tampa, Florida, formerly of Chicago, who graduated at the University of Pennsylvania School of Medicine in 1886, died September 11, aged 92. He was the author of the "American Illustrated Medical Dictionary," first published in 1900 and now in its twenty-second edition.

Edward A. Elfeld, retired, Arlington Heights, who graduated at the Homeopathic Medical College of Missouri, St. Louis, in 1891, died in Denver, October 5, aged 88.

Richard G. Fort*, Glenview, who graduated at the University of Illinois College of Medicine in 1939, died October 2, aged 41. He was a member of the staff of St. Francis Hospital, Evanston.

Adolphus N. Gordon, Sr., Chicago, who graduated at Meharry Medical College, Nashville, in 1894, died September 22, aged 86.

Frederick Charles Jacobsen, Palos Heights, who graduated at Jenner Medical College in 1907, died March 5, aged 80, of uremia due to carcinoma.

David P. Johnson, retired, Chicago, who graduated at Rush Medical College in 1902, died September 30, aged 91.

Clement Stanislaw Marczak, Lockport, who graduated at the Chicago Medical School in 1930, died in Chicago May 29, aged 67.

Benjamin Markowitz*, Bloomington, who graduated at Stritch School of Medicine of Loyola University in 1922, died September 17, aged 60. He was a former president of the Illinois Society of Pathologists.

Robert C. Menzies, Chicago, who graduated at Rush Medical College in 1905, died September 23, aged 77. He had practiced medicine on Chicago's north side for more than 40 years.

Herman Christian Newton*, retired, Chicago, who graduated at Northwestern University Medical School in 1905, died July 1, aged 80, of a heart attack.

Georgia Wetmore Steffens, retired, Evanston, who graduated at the Hahnemann Medical College and Hospital in 1918, died September 10, aged 73.

Otto Wallis*, Chicago, who graduated at Medizinische Fakultat der Universitat, Wien, Austria, in 1926, died September 9, aged 55. He was a member of the staff of Columbus and Frank Cuneo Memorial Hospitals.

Milton A. Wiese*, Libertyville, who graduated at the University of Illinois College of Medicine in 1914, died September 18, aged 64. He was a member of the staff of Alexian Brothers Hospital, Condell Memorial Hospital in Libertyville, and St. Therese Hospital, Waukegan.

*Indicates member of the Illinois State Medical Society.

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Oral K

A vitamin K_1 tablet for oral administration has become available. This drug, in doses of 2.5 mg. to 20 mg., was administered to 75 patients in whom excessively elevated prothrombin time values were produced by prothrombinopenic anticoagulant therapy. In 85 per cent of the patients studied, prothrombin time returned to a safe range (35 seconds or less, within 12 hours after the oral administration of vitamin K_1 in this dosage and in 98 per cent of the patients within 24 hours. The prothrombin time fell below the lower therapeutic level of adequate anticoagulation in 15 per cent of the patients at 12 hours following vitamin K_1. Under such circumstances the administration of heparin insured a continuing antithrombic effect until subsequent doses of coumarin or indandione agent again achieved an adequate hypoprothrombinemia. Since most hemorrhages during anticoagulation occur in association with prothrombin time values above 35 seconds, vitamin K_1 tablets for oral use provide an additional safeguard in coumarin and indandione therapy. *Stuart W. Cosgriff. M.D. The Effectiveness of an Oral Vitamin K_1 in Controlling Excessive Hypoprothrombinemia during Anticoagulant Therapy. Ann. Int. Med. July* 1956.